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United Nations

Report of the Committee on the Peaceful Uses of Outer Space

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Fifty-seventh session
Supplement No. 20 (A/57/20)

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Chapter I

Introduction

1. The Committee on the Peaceful Uses of Outer Space held its forty-fifth session in Vienna from 5 to 14 June 2002. The officers of the Committee were as follows:

Chairman:

Raimundo González (Chile)

First Vice-Chairman:

Driss El Hadani (Morocco)

Second Vice-Chairman/Rapporteur:

Harijono Djojodihardjo (Indonesia)

The unedited verbatim transcripts of the meetings of the Committee are contained in documents COPUOS/T.488-502.

A. Meetings of subsidiary bodies

2. The Scientific and Technical Subcommittee of the Committee on the Peaceful Uses of Outer Space had held its thirty-ninth session in Vienna from 25 February to 8 March 2002 under the chairmanship of Karl Doetsch (Canada). The report of the Subcommittee was before the Committee (A/AC.105/786).

3. The Legal Subcommittee of the Committee on the Peaceful Uses of Outer Space had held its forty-first session in Vienna from 2 to 12 April 2002 under the chairmanship of Vladimír Kopal (Czech Republic). The report of the Subcommittee was before the Committee (A/AC.105/787). The unedited verbatim transcripts of the meetings of the Subcommittee are contained in documents COPUOS/Legal/T.656-673.

B. Adoption of the agenda

4. At its opening meeting, the Committee adopted the following agenda:

1. Adoption of the agenda.
2. Statement by the Chairman.
3. General exchange of views.
4. Ways and means of maintaining outer space for peaceful purposes.
5. Implementation of the recommendations of the Third United Nations Conference on the Exploration and Peaceful Uses of Outer Space (UNISPACE III).
6. Report of the Scientific and Technical Subcommittee on its thirty-ninth session.
7. Report of the Legal Subcommittee on its forty-first session.
8. Spin-off benefits of space technology: review of current status.
9. Space and society.
10. Other matters.
11. Report of the Committee to the General Assembly.

C. Membership

5. In accordance with General Assembly resolutions 1472 A (XIV) of 12 December 1959, 1721 E (XVI) of 20 December 1961, 3182 (XXVIII) of 18 December 1973, 32/196 B of 20 December 1977, 35/16 of 3 November 1980, 49/33 of 9 December 1994 and 56/51 of 10 December 2001 and decision 45/315 of 11 December 1990, the Committee on the Peaceful Uses of Outer Space was composed of the following States: Albania, Argentina, Australia, Austria, Belgium, Benin, Brazil, Bulgaria, Burkina Faso, Cameroon, Canada, Chad, Chile, China, Colombia, Cuba, Czech Republic, Ecuador, Egypt, France, Germany, Greece, Hungary, India, Indonesia, Iran (Islamic Republic of), Iraq, Italy, Japan, Kazakhstan, Kenya, Lebanon, Malaysia, Mexico, Mongolia, Morocco, Netherlands, Nicaragua, Niger, Nigeria, Pakistan, Peru, Philippines, Poland, Portugal, Republic of Korea, Romania, Russian Federation, Saudi Arabia, Senegal, Sierra Leone, Slovakia, South Africa, Spain, Sudan, Sweden, Syrian Arab Republic, Turkey, Ukraine, United Kingdom of Great Britain and Northern Ireland, United States of America, Uruguay, Venezuela and Viet Nam.

D. Attendance

6. Representatives of the following States members of the Committee attended the session: Argentina, Australia, Austria, Belgium, Brazil, Bulgaria, Burkina Faso, Canada, Chile, China, Colombia, Cuba, Czech Republic, Ecuador, Egypt, France, Germany, Greece, Hungary, India, Indonesia, Iran (Islamic Republic of), Iraq, Italy, Japan, Kenya, Lebanon, Malaysia, Mexico, Morocco, Netherlands, Nicaragua, Nigeria, Pakistan, Peru, Philippines, Poland, Portugal, Republic of Korea, Romania, Russian Federation, Saudi Arabia, Slovakia, South Africa, Spain, Sudan, Sweden, Syrian Arab Republic, Turkey, Ukraine, United Kingdom, United States, Uruguay, Venezuela and Viet Nam.

7. At its 488th, 492nd and 495th meetings, the Committee decided to invite, at their request, representatives of Algeria, Côte d'Ivoire, Cyprus, the Holy See, the Libyan Arab Jamahiriya, Switzerland, Thailand and Yemen to attend its forty-fifth session and to address it, as appropriate, on the understanding that it would be without prejudice to further requests of that nature and that it would not involve any decision of the Committee concerning status.

8. Representatives of the United Nations Educational, Scientific and Cultural Organization (UNESCO) and the International Atomic Energy Agency (IAEA) attended the session.

9. The session was also attended by representatives of the European Association for the International Space Year (EURISY), the European Space Agency (ESA), the International Astronautical Federation (IAF), the International Law Association (ILA), the International Mobile Satellite Organization (IMSO), the International Society for Photogrammetry and Remote Sensing (ISPRS) and the Space Generation Advisory Council.

10. A list of representatives of States members of the Committee, States not members of the Committee, United Nations entities and other organizations attending the session is contained in document A/AC.105/XLV/INF/1.

E. General statements

11. Statements were made by representatives of the following States members of the Committee during the general exchange of views: Argentina, Australia, Austria, Brazil, Canada, Chile, China, Colombia, Ecuador, France, Germany, Hungary, India, Indonesia, Iran (Islamic Republic of), Iraq, Italy, Japan, Malaysia, Mexico, Morocco, Nigeria, Peru, Portugal, Republic of Korea, Romania, Russian Federation, Saudi Arabia, South Africa, Spain, Syrian Arab Republic, Turkey and the United States. The representative of Venezuela also made a statement on behalf of the Group of Latin American and Caribbean States. The representatives of Algeria and the Libyan Arab Jamahiriya also made statements. Statements were made by the representatives of ESA, IAF, ILA and ISPRS.

12. The representative of Slovakia made a presentation entitled "Recent space activities in Slovakia".

13. At the 488th meeting, on 5 June, the Chairman made a statement outlining the work of the Committee at its current session and stressing the contribution that space applications could make to sustainable development and global efforts to eradicate poverty.

14. Also at the 488th meeting, the Director of the Office for Outer Space Affairs of the Secretariat made a statement reviewing the work of the Office during the previous year.

15. The Committee commended Mazlan Othman, the outgoing Director of the Office for Outer Space Affairs, for her commitment, creativity and effectiveness in promoting the goals of the Committee and for her outstanding management of the Office.

F. Adoption of the report of the Committee

16. After considering the various items before it, the Committee, at its 502nd meeting, on 14 June 2002, adopted its report to the General Assembly containing the recommendations and decisions set out below.

Chapter II

Recommendations and decisions

A. Ways and means of maintaining outer space for peaceful purposes

17. In accordance with paragraph 44 of General Assembly resolution 56/51, the Committee on the Peaceful Uses of Outer Space continued its consideration, as a matter of priority, of ways and means of maintaining outer space for peaceful purposes.

18. The Committee was of the view that the General Assembly, by requesting in resolution 56/51 that the Committee continue its consideration, as a matter of priority, of ways and means of maintaining outer space for peaceful purposes and report thereon to the Assembly at its fifty-seventh session, had expressed the concern of the international community about the need to promote international cooperation in the peaceful uses of outer space, taking into particular account the needs of developing countries. The Committee, through its work in the scientific, technical and legal fields, had a fundamental role to play in ensuring that outer space was maintained for peaceful purposes. That role could be strengthened by new initiatives, as well as continuing progress in implementing the recommendations of the Third United Nations Conference on the Exploration and Peaceful Uses of Outer Space (UNISPACE III).

19. The Committee agreed that it had responsibilities relating to strengthening the international basis for the peaceful exploration and uses of outer space, which could cover, among other things, the further development of international space law, including, as appropriate, the preparation of international agreements governing various practical peaceful applications of space science and technology. The Committee agreed that it also had an important role to play in promoting acceptance of the existing United Nations treaties on outer space and in encouraging States to develop national space legislation.

20. The Committee agreed that beneficial uses of space such as strengthening communications infrastructure, disaster management, education, agriculture, environmental protection and natural resource management had enormous relevance for human development, in particular in developing countries, and that the wider adoption of such beneficial applications would strengthen the goal of maintaining outer space for peaceful purposes.

21. The Committee agreed that activities involving international cooperation, such as participation in international scientific campaigns, sharing of satellite data, providing educational and training assistance to other countries and building institutional capacity, should be further encouraged to enable outer space to be explored and used for peaceful purposes. The Committee also noted that activities such as the Shuttle-Mir programme and international cooperation in Earth sciences had helped to bring nations closer together.

22. The view was expressed that the success of the Committee's efforts to revitalize its work was indicated by the growing relevance of its work to the international community, as shown by the steady increase over the previous few years in the number of other intergovernmental organizations, as well as non-governmental organizations and private entities, that were seeking to participate in the Committee's work.

23. The view was expressed that, under the agenda item entitled "Ways and means of maintaining outer space for peaceful purposes", the Committee could consider issues such as ways to promote regional and interregional cooperation based on experiences stemming from the Space Conferences of the Americas and ways to use space technology to help put into effect the outcome of the World Summit on Sustainable Development, to be held in Johannesburg, South Africa, from 26 August to 4 September 2002.

24. The view was expressed that the Committee should proceed from a general discussion to a well-structured and organized process that could lead to substantial results. That delegation expressed the view that, under the agenda item, the Committee could consider creating a concrete work plan and establish a working group on one or more issues. One major theme that the Committee could address was the rapidly developing legal framework for multilateral and bilateral cooperation in outer space. Under that theme, the Committee could accumulate and analyse information on international agreements for cooperation in outer space activities concluded by Governments and international organizations. More ambitious objectives could include consideration of the

possible format and content of a comprehensive treaty on outer space.

25. The view was expressed that the Committee had been established as the body of the General Assembly concerned exclusively with promoting international cooperation in the peaceful uses of outer space. That delegation expressed the view that the Committee had not been created to deal with disarmament and that it had been clear at the time of the Committee's establishment that there would be parallel efforts to deal with the disarmament aspects of outer space in forums such as the General Assembly and the Conference on Disarmament. That delegation expressed the view that positive developments such as the unprecedented level of international cooperation and the significant presence of the private sector in outer space did not support the Committee's consideration of matters relating to the militarization of outer space. That delegation was of the view that the Committee provided a unique opportunity for the exchange of information among developed and developing countries on the latest developments in the use and exploration of outer space and that there were tangible opportunities to enhance international cooperation in line with the mandate of the Committee.

26. The view was expressed that the Committee had a proper mandate for and could play an important role in preventing the militarization of outer space. That delegation noted that the States participating in UNISPACE III, in the resolution entitled "The Space Millennium: Vienna Declaration on Space and Human Development",[1] and the General Assembly, in several resolutions, including its resolution 56/51, had stated that prevention of an arms race in outer space was an essential condition for the promotion of international cooperation in the peaceful uses of outer space. That delegation expressed the view that the roles of the Committee and the Conference on Disarmament were complementary.

27. The view was expressed that there should be a practical mechanism for coordinating the work of the Committee and that of disarmament bodies such as the Conference on Disarmament, similar to the mechanisms that the Committee had already been using to coordinate its work with the International Telecommunication Union (ITU) and IAEA.

28. Some delegations expressed the view that certain ongoing research and testing of outer space weaponry could lead to the "weaponization" of outer space, threaten the human development and peaceful uses of outer space and have a negative impact on the international security structure. Those delegations called on States with major space capabilities to contribute to the goal of preventing an arms race in outer space.

29. The Committee was provided with information on an international disarmament seminar co-sponsored by China and the United Nations entitled "A Disarmament Agenda for the 21st Century", held in Beijing from 2 to 4 April 2002. The seminar had expressed serious concern over the danger of militarization in outer space and had called for the negotiation and conclusion of a legally binding international instrument for the prevention of an arms race in outer space.

30. The view was expressed that, while existing international agreements limited the military uses of outer space and protected spacecraft from hostile interference, there was no international legal prohibition applied to some possible military uses of outer space, such as space-based strike capabilities, anti-satellite systems and tools of radio electronic and optical electronic suppression.

31. Some delegations expressed the view that an international agreement should be concluded to keep space free of weapons and to prevent an arms race in outer space. Those delegations recalled that a proposal submitted to the Conference on Disarmament and disseminated to Governments throughout the world had recommended the conclusion of an international treaty against the deployment of weapons in outer space and the use of force, as well as the threat of the use of force, against space objects.

32. The view was expressed that, as a practical first step, States should agree to a moratorium on deploying weapons in outer space until an agreement on the matter had been reached by the international community.

33. The view was expressed that funds should be provided to cover costs for least developed countries to participate in the work of the Committee and its subsidiary bodies, as had been done for the Commission on Crime Prevention and Criminal Justice and various ad hoc committees for the negotiation of international legal instruments.

34. Some delegations expressed the view that one of the most effective means of maintaining outer space for peaceful research and use was the application of transparent policies allowing non-restrictive participation in scientific research and that such knowledge should be shared to make the best use of scarce resources and to avoid duplication of effort.

35. The Committee recommended that, at its forty-sixth session, in 2003, it should continue its consideration, on a priority basis, of the item on ways and means of maintaining outer space for peaceful purposes.

B. Implementation of the recommendations of the Third United Nations Conference on the Exploration and Peaceful Uses of Outer Space (UNISPACE III)

36. In accordance with General Assembly resolution 56/51, the Committee considered an item on the implementation of the recommendations of UNISPACE III.

37. Pursuant to paragraph 30 of resolution 56/51, the Committee established a Working Group at its 488th meeting, on 5 June 2002 under the chairmanship of Niklas Hedman (Sweden), to prepare a report for submission to the General Assembly, in order for the Assembly to review and appraise, at its fifty-ninth session, in 2004, in accordance with paragraph 16 of Assembly resolution 54/68 of 6 December 1999, the implementation of the outcome of UNISPACE III and to consider further actions and initiatives. Pursuant to paragraph 31 of resolution 56/51, the Committee requested the Working Group to make recommendations to it on the format, scope and organizational aspects of the above-mentioned review by the Assembly.

38. At its 501st meeting, on 14 June 2002, the Committee endorsed the recommendations of the Working Group as contained in the report of the Working Group (see annex I to the present report).

39. The Committee noted that the General Assembly, in its resolutions 55/122 of 8 December 2000 and 56/51, had urged all Governments, organs, organizations and programmes of the United Nations system as well as intergovernmental and non-governmental organizations and industries conducting space-related activities to take the necessary action for the effective implementation of the recommendations of UNISPACE III, in particular its resolution entitled "The Space Millennium: Vienna Declaration on Space and Human Development".[1]

40. The Committee noted that, in accordance with General Assembly resolution 56/51, the Scientific and Technical Subcommittee at its thirty-ninth session had convened the Working Group of the Whole, under the chairmanship of Muhammad Nasim Shah (Pakistan), to consider the implementation of the recommendations of UNISPACE III. The Committee noted that the Working Group of the Whole had made recommendations on the following: (a) reports by the action teams established by the Committee at its forty-fourth session; (b) establishment of other action teams and involvement of organizations of the United Nations system and other intergovernmental and non-governmental organizations having permanent observer status with the Committee; (c) engagement of non-governmental entities in action teams; and (d) progress report on the implementation of the recommendations of UNISPACE III. The Committee commended the work conducted by the Scientific and Technical Subcommittee and its Working Group of the Whole with a view to making progress in the implementation of the recommendations of UNISPACE III.

41. The Committee stressed the importance of the implementation of the recommendations of UNISPACE III. The Committee agreed that it had the primary responsibility to implement the recommendations, including the coordination of action teams.

42. The Committee recalled that, at its forty-fourth session, it had established 11 action teams to implement those recommendations which had been accorded highest priority by Member States or those for which offers to be leaders of the activities had been received.[2] The Committee noted that all action teams had reported on their work and submitted their work plans to the Scientific and Technical Subcommittee at its thirty-ninth session as requested by the Committee. At the forty-fifth session of the Committee, the action teams reported on further developments in their work (see conference room papers A/AC.105/2002/CRP.8, A/AC.105/2002/CRP.11, A/AC.105/2002/CRP.12, A/AC.105/2002/CRP.13, A/AC.105/2002/CRP.14, A/AC.105/2002/CRP.16 and A/AC.105/2002/CRP.17.

43. The Committee expressed its appreciation to all the chairs of the action teams, who had exercised leadership in conducting the work associated with the recommendations and coordinated the activities of the action teams. The Committee noted that some action teams were experiencing difficulty in receiving feedback from Member States in response to the questionnaires that they had circulated to collect necessary information for their work. The Committee agreed that Member States should provide full support to the action teams in conducting their work.

44. The Committee recognized that ensuring the transparency of the work of the action teams was of fundamental importance to Member States. In this regard, the Committee agreed that it was important that all action teams continue to report to the Committee and its Scientific and Technical Subcommittee.

45. The view was expressed that, building on the information that action teams were collecting, the action teams' next step should be to identify specific actions and pilot projects that could be implemented by Member States, by the Office for Outer Space Affairs based on decisions of the Committee and its subcommittees, or by intergovernmental organizations and other interested parties at the international levels, including regional levels.

46. The view was expressed that, in order to ensure the widest participation possible and to facilitate the participation of experts travelling from abroad, it would be beneficial to arrange meetings of action teams immediately before or after the sessions of the Scientific and Technical Subcommittee, so that the experts could participate in meetings of both the action teams and the Subcommittee.

47. The Committee noted that some Governments were implementing various recommendations of UNISPACE III through the adoption of national space policies.

C. Report of the Scientific and Technical Subcommittee on its thirty-ninth session

48. The Committee took note with appreciation of the report of the Scientific and Technical Subcommittee on its thirty-ninth session (A/AC.105/786), covering the results of its deliberations on the items assigned to it by the General Assembly in resolution 56/51.

1. United Nations Programme on Space Applications

(a) Activities of the United Nations Programme on Space Applications

49. At the outset of the deliberations of the Committee on the item, the Expert on Space Applications briefed the Committee on the overall strategy for the implementation of the United Nations Programme on Space Applications, which would concentrate on a few themes of major importance for developing countries and establish objectives that could be reached in the short and medium term. The Committee noted that, within each priority theme, the two main objectives would be (a) capacity-building and (b) building awareness among decision makers in order to strengthen local support for the operational use of space technologies.

50. The Committee noted that the priority themes of the Programme were (a) disaster management; (b) satellite communications for tele-education and telemedicine applications; (c) monitoring and protection of the environment, including the prevention of infectious diseases; (d) management of natural resources; and (e) education and capacity-building, including research areas in basic space sciences. Other areas that the Programme would promote included developing capability in enabling technologies, such as the use of global navigation and positioning satellite systems, spin-offs of space technology, promoting the participation of youth in space activities, applications of small satellites and micro-satellites and promoting the participation of private industry in activities of the Programme. The Committee further noted that the activities of the Programme would support, where feasible, the action teams established by the Committee to implement the recommendations of UNISPACE III.

51. The Committee took note of the activities of the Programme carried out in 2001 as set out in the report of the Scientific and Technical Subcommittee (A/AC.105/786, paras. 34-38). The Committee expressed its appreciation to the Expert on Space Applications for the manner in which he had implemented the activities of the Programme within the limited funds at his disposal and expressed its appreciation to the Governments and intergovernmental and

non-governmental organizations that had sponsored the activities. The Committee was pleased to note that further progress was being made in the implementation of the activities of the Programme for 2002, as set out in the report of the Subcommittee (A/AC.105/786, para. 39).

52. The Committee expressed its concern over the still limited financial resources available to the United Nations Programme on Space Applications and appealed to the donor community to support the Programme through voluntary contributions.

(i) United Nations conferences, training courses and workshops

53. With regard to the United Nations conferences, training courses and workshops organized in the first half of 2002, the Committee expressed its appreciation to the following:

(a) The Government of India, represented by the Indian Space Research Organisation (ISRO), for co-sponsoring the United Nations Workshop on Satellite-Aided Search and Rescue, held in Bangalore, India, from 18 to 22 March 2002;

(b) The Government of Chile, represented by the Ministry of Foreign Affairs and the Feria Internacional del Aire y del Espacio, for co-sponsoring the Third United Nations/United States of America Workshop on the Use of Global Satellite Navigation Systems, held in Santiago, Chile, from 1 to 5 April 2002;

(c) The Government of Sweden, represented by the Swedish International Development Cooperation Agency (Sida), Stockholm University, Metria and the National Land Survey of Sweden for co-sponsoring the Twelfth United Nations/Sweden International Training Course on Remote Sensing Education for Educators, held in Stockholm and Kiruna, Sweden, from 2 May to 8 June 2002;

(d) The Government of China, represented by the Ministry of Science and Technology, for co-sponsoring with the Economic and Social Commission for Asia and the Pacific, the eighth session of the Intergovernmental Consultative Committee on the Regional Space Applications Programme for Sustainable Development in Asia and the Pacific, the eighth meeting of the Regional Working Group on Remote Sensing, Geographic Information Systems and Satellite-based Positioning and the Regional Workshop on Cooperative Mechanisms in Space Technology Applications for Disaster Management, which were held in Beijing in June 2002.

54. The Committee endorsed the following workshops, training courses, symposiums and conferences planned for the remaining part of 2002, based on the programme of activities described in the report of the Expert on Space Applications (A/AC.105/773, annex II):

(a) United Nations/Economic Commission for Africa/European Space Agency/Committee on Earth Observation Satellites Regional Workshop on the Use of Space Technology for Disaster Management, to be held in Addis Ababa from 1 to 5 July 2002;

(b) Fourth United Nations/United States of America Workshop on the Use of Global Satellite Navigation Systems, for the benefit of Africa and Western Asia, to be held in Lusaka from 15 to 19 July 2002;

(c) United Nations/South Africa/European Space Agency Symposium entitled "Space Technology Provides Solutions for Sustainable Development", to be held in Stellenbosch, South Africa, from 21 to 23 August 2002, the venue being subject to further review after further consultation with the Government of South Africa;

(d) Third United Nations/Austria/European Space Agency Symposium on Enhancing the Participation of Youth in Space Activities, to be held in Graz, Austria, from 9 to 12 September 2002;

(e) Eleventh United Nations/European Space Agency Workshop on Basic Space Science, to be held in Córdoba, Argentina, from 9 to 13 September 2002;

(f) United Nations/International Astronautical Federation Workshop on Space Solutions for Global Problems: Building Working Partnerships with All Stakeholders in Human Security and Development, to be held in Houston, Texas, United States, from 10 to 12 October 2002, during the Second World Space Congress;

(g) Third United Nations/International Academy of Astronautics Workshop on Small Satellites at the Service of Developing Countries: beyond Technology Transfer, to be held in Houston, Texas,

United States, on 12 October 2002, during the Second World Space Congress;

(h) United Nations/Economic and Social Commission for Asia and the Pacific/European Space Agency/Committee on Earth Observation Satellites Regional Workshop on the Use of Space Technology for Disaster Management for Asia and the Pacific, to be held in Bangkok from 11 to 15 November 2002;

(i) United Nations/United States of America International Meeting of Experts on the Use of Global Navigation Satellite Systems, to be held in Vienna from 11 to 15 November 2002;

(j) Joint United Nations/International Institute of Air and Space Law Workshop on Capacity-Building in Space Law, to be hosted by the Government of the Netherlands and held in The Hague from 18 to 21 November 2002;

(k) The following workshops and training courses being organized at the regional centres for space science and technology education, affiliated to the United Nations:

(i) In India:

a. Third nine-month postgraduate course on satellite meteorology and global climate;

b. International short course on remote sensing and geographic information systems (GIS): technology and applications in natural resources and environmental management;

c. Third nine-month postgraduate course on space and atmospheric science;

d. Seventh nine-month postgraduate course on remote sensing and GIS;

e. Short-term course on satellite meteorology;

(ii) In Morocco:

a. Nine-month training programme on remote sensing and GIS, to start in November 2001;

b. Nine-month training programme on satellite meteorology, to start in January 2002;

c. Second nine-month training course on satellite communications, to start in October 2002;

d. International Workshop on the Use of Space Technology in Telemedicine, to be held in December 2002;

e. International Workshop on Regulation and Management of the Frequency Spectrum, in cooperation with the International Telecommunication Union;

(iii) In Nigeria: second nine-month course on remote sensing and GIS, to start in November 2002.

55. The Committee noted that the workshop that, according to the report of the Expert on Space Applications (A/AC.105/773, annex II), had been scheduled to be held in Prague in 2002 had been postponed until further notice.

56. The Committee endorsed the following programme of workshops, training courses, symposiums and conferences planned for 2003:

(a) United Nations/European Space Agency/General Organization of Remote Sensing Workshop on Remote Sensing Applications and Education, to be held in Damascus from 23 to 27 March 2003;

(b) United Nations Regional Workshop on the Use of Space Technology for Disaster Management for Western Asia and Central and Eastern Europe, to be held in May 2003;

(c) Thirteenth United Nations/Sweden International Training Course on Remote Sensing Education for Educators, to be held in Stockholm and Kiruna, Sweden, in May and June 2003;

(d) United Nations/Thailand Workshop on the Space Technology Contribution to Bridge the Digital Divide, to be held in Thailand in the second quarter of 2003 for the benefit of countries in Asia and the Pacific;

(e) Twelfth United Nations/European Space Agency Workshop on Basic Space Science, to be held in Beijing in September 2003;

(f) United Nations/Austria/European Space Agency Symposium on the Use of Space Technology in Sustainable Development, to be held in Graz, Austria, in September 2003;

(g) United Nations/International Astronautical Federation Workshop on the Use of Space Technology

for the Benefit of Developing Countries, to be held in Bremen, Germany, in September and October 2003;

(h) Fourth United Nations/International Academy of Astronautics Workshop on Small Satellites at the Service of Developing Countries, to be held in Bremen, Germany, in September and October 2003;

(i) United Nations Workshop on Satellite-Aided Search and Rescue, to be held in Miami, Florida, United States, in November 2003 for the benefit of countries in Central America and the Caribbean;

(j) United Nations Workshop on Space Law, to be held in 2003 for the benefit of developing countries.

57. The Committee noted with appreciation financial contributions of $130,000 from ESA to the United Nations Programme on Space Applications in 2002 and $500,000 from the Government of the United States for activities of the Programme in 2001 and 2002; and $60,000 from the National Oceanic and Atmospheric Administration of the United States and €55,000 from the Government of France in support of workshops on disaster management. The Committee also noted with appreciation that the Government of the Libyan Arab Jamahiriya had contributed €6,800 and the Government of Austria had contributed €2,880 for activities relating to World Space Week in 2002.

58. The Committee noted with appreciation the provision, by host countries and entities, of experts to serve as instructors and speakers in activities of the United Nations Programme on Space Applications in 2002. It also noted with appreciation the financial and other assistance that had been provided for the Programme by the Government of Austria, the Government of Styria and the City of Graz, Austria, and the Department of Physical Geography of Stockholm University, Metria and the National Land Survey of Sweden.

59. The Committee noted with appreciation that the host countries of the regional centres for space science and technology education were providing significant financial and other support to the centres.

(ii) Long-term fellowships for in-depth training

60. The Committee expressed its appreciation to ESA for having offered five long-term fellowships for the period 2002-2003. The training programmes included one fellowship each in satellite communications systems, space antennas and electromagnetics, and remote sensing instrumentation tenable at the European Space Technology Centre of ESA in Noordwijk, the Netherlands, and two fellowships for research in remote sensing technology tenable at the European Space Research Institute of ESA in Frascati, Italy.

61. The Committee noted that it was important to increase the opportunities for in-depth education in all areas of space science, technology and applications projects through long-term fellowships and urged Member States to make such opportunities available at their relevant institutions.

(iii) Technical advisory services

62. The Committee noted that the Programme had provided technical advisory services in support of projects involving regional space applications, as indicated in the report of the Expert on Space Applications (A/AC.105/773, paras. 21-30), including the following:

(a) Collaboration with ESA on follow-up activities in Africa, Asia and the Pacific, Latin America and the Caribbean and Western Asia relating to the series of workshops on basic space science;

(b) Providing assistance to support the growth and operation of the Asia-Pacific Satellite Communications Council, technical assistance in the preparations for the Council's 2003 conference and exhibition, and assistance in extending the Council's membership;

(c) Providing assistance to the Disaster Management Support Group of the Committee on Earth Observation Satellites (CEOS);

(d) Presenting to the fifteenth plenary meeting of CEOS, held in Kyoto, Japan, on 6 and 7 November 2001, the action teams established by the Committee on the Peaceful Uses of Outer Space and its Scientific and Technical Subcommittee to implement the recommendations of UNISPACE III and co-chairing with ISRO the ad hoc Working Group on Education of CEOS;

(e) Collaborating with ESA and the Department of Economic and Social Affairs of the Secretariat in providing the technical assistance and expertise required for concluding a project on the use of Earth

observation data for monitoring glaciers and snow cover in Latin America, concluding a project for watershed management in Asia and the Pacific and initiating a project in Africa on the use of satellite data in locating and planning the management of humid areas in 2002;

(f) Providing technical advice to the Government of Colombia on the preparation of the Fourth Space Conference of the Americas, held in Cartagena de Indias, Colombia, from 14 to 17 May 2002, and sponsoring the participation of scientists from developing countries in the region in that Conference.

(iv) Promotion of greater cooperation in space science and technology

63. The Committee on the Peaceful Uses of Outer Space noted that the United Nations Programme on Space Applications would co-sponsor the participation of scientists from developing countries in the thirty-fourth Scientific Assembly of the Committee on Space Research (COSPAR) during the World Space Congress, to be held in Houston, Texas, United States, from 10 to 19 October 2002.

64. The Committee noted that the Programme had sponsored the participation of scientists from developing countries in the ISPRS Commission VI Workshop entitled "Development and Technology Transfer in Geomatics for Environmental and Resource Management", held in Dar es Salaam from 25 to 28 March 2002.

65. The Committee also noted that the Programme would co-sponsor the participation of scientists from developing countries in the second training courses on space technology and remote sensing applications in Asia and the Pacific, to be held in Beijing and Harbin, China, from 11 July to 10 August 2002.

66. The view was expressed that more consideration should be given to promoting space science and technology education in Iraq.

67. The view was expressed that the United Nations Programme on Space Applications should assist developing countries in building capacity in the application of space technologies for better water management, for instance through pilot projects initiated through the regional centres for space science and technology education.

(b) International space information service

68. The Committee noted with satisfaction that the thirteenth in the series of documents containing selected papers from the activities of the Programme, entitled *Seminars of the United Nations Programme on Space Applications*, had been issued.[3] The Committee also noted with satisfaction the publication of a directory of education, training, research and fellowship opportunities in space science and technology and its applications,[4] which was also available on the web site of the Office for Outer Space Affairs (http://www.oosa.unvienna.org).

69. The Committee noted with satisfaction that the Secretariat had continued to enhance the International Space Information Service and the web site of the Office for Outer Space Affairs, which contained, among other things, a regularly updated index of objects launched into outer space, information on the status of United Nations treaties governing activities in outer space and a calendar of meetings and activities of the United Nations Programme on Space Applications. The Committee also noted with satisfaction that the Secretariat was maintaining a web site on the coordination of outer space activities within the United Nations system (http://www.uncosa.unvienna.org).

(c) Regional and interregional cooperation

70. The Committee emphasized the importance of regional and international cooperation in making the benefits of space technology available to all countries by such cooperative activities as sharing payloads, disseminating information on spin-off benefits, ensuring compatibility of space systems and providing access to launch capabilities at reasonable cost.

71. The Committee noted with satisfaction the success of the Fourth Space Conference of the Americas that had been held in Cartagena de Indias, Colombia, from 14 to 17 May 2002. The Conference had discussed mechanisms for cooperation and coordination between countries in the region in various areas of space science and technology, with respect to their applications in areas such as disaster management, tele-education, telemedicine and public health and environmental protection and in fields such as space law and telecommunications. The Conference had adopted the Declaration of Cartagena de Indias and the Plan of Action of the Fourth Space Conference of the Americas, which had been made available during

the forty-fifth session of the Committee (A/AC.105/2002/CRP.7). The Committee took note of the offer made by various member States to cooperate with the Government of Colombia as the pro-tempore Secretariat in the implementation of the Declaration and Plan of Action. The Declaration and Plan of Action are reproduced in annex II to the present report.

72. The Committee noted with appreciation the continuing efforts undertaken through the United Nations Programme on Space Applications, in accordance with General Assembly resolution 45/72 of 11 December 1990, in leading an international effort to establish regional centres for space science and technology education in existing national or regional educational institutions in developing countries, as contained in the document entitled "Regional centres for space science and technology education (affiliated to the United Nations)" (A/AC.105/749). The Committee also noted that, once established, each centre could expand and become part of a network that could cover specific programme elements in established institutions related to space science and technology in each region.

73. The Committee recalled that the General Assembly, in its resolution 50/27 of 6 December 1995, had endorsed the recommendation of the Committee that the centres be established on the basis of affiliation to the United Nations as early as possible and that such affiliation would provide the centres with the necessary recognition and would strengthen the possibilities of attracting donors and of establishing academic relationships with national and international space-related institutions.

74. The Committee noted with satisfaction that the Centre for Space Science and Technology Education in Asia and the Pacific had held its seventh Governing Board Meeting and its fourth Advisory Committee Meeting in Dehra Dun, India, on 23 and 25 April 2002. The Committee also noted with satisfaction that the Centre had so far conducted 13 postgraduate courses and 10 short-term courses. A total of 340 scholars from 39 countries in the region had benefited from the educational activities of the Centre. Karl Harmsen of the Netherlands had taken over as the new Director of the Centre in April 2002, at the end of the term of B. L. Deekshatulu, the founding Director.

75. The Committee noted with appreciation that the Government of China had established the Multilateral Space Cooperation Secretariat for the Asia and Pacific Region. The establishment of the Secretariat would play a positive promoting role for space technological cooperation in the region.

76. The Committee noted with satisfaction that the first nine-month course on remote sensing and satellite meteorology had been completed in May 2001 at the African Regional Centre for Space Science and Technology Education—in English Language and that the second nine-month course on the subject was being held at the Centre from 1 October 2001 to 28 June 2002.

77. The Committee noted with satisfaction that the first nine-month course on remote sensing and GIS had been completed in February 2001 at the African Regional Centre for Space Science and Technology—in French Language and that the nine-month course on space communication had been completed at the Centre in August 2001. The Committee also noted with satisfaction that two nine-month courses—one on remote sensing and GIS and the other on satellite meteorology—had begun in November 2001 at the Centre.

78. The Committee noted with satisfaction that the second meeting of the Governing Board of the Regional Centre for Space Science and Technology Education in Latin America and the Caribbean had been held in Mexico City on 29 April 2002, that action was being taken to proceed with the affiliation of the Centre to the United Nations and that preparations were being made to begin in 2003 the first nine-month courses on remote sensing and GIS at the Centre.

79. The Committee noted with satisfaction that the Bulgarian Academy of Sciences, in cooperation with COSPAR, the European Community and the Office for Outer Space Affairs, had organized a colloquium entitled "Plasma Processes in the Near-Earth Space: Interball and Beyond", in Sofia from 5 to 10 February 2002. States members of the Network of Space Science and Technology Education and Research Institutions for Central Eastern and South-Eastern Europe had been invited to participate in and contribute to the colloquium.

80. The Committee noted that the Office for Outer Space Affairs, in cooperation with ESA, had organized the United Nations Expert Meeting on the Regional Centres for Space Science and Technology Education: Status and Future Development in Frascati, Italy, from 3 to 7 September 2001. The Meeting had been hosted

by the European Space Research Institute. The Meeting had reviewed the status of the establishment and operation of the regional centres with a view to enhancing cooperation between the centres. The main objective of the Meeting had been to review and update curricula at the university level and across cultures in four areas: remote sensing, satellite meteorology, satellite communications and space science. The Meeting had considered that education varied significantly between countries and even between institutions within the same country, leading to differences in space science and technology education curricula in terms of course content and modes of presentation. The Meeting had noted that the model curricula developed in 1995 (A/AC.105/649) had contributed to resolving such problems.

81. The Committee further noted that the United Nations Expert Meeting had established five working groups to focus on the following topics in connection with education curricula: (a) management issues of the centres; (b) remote sensing; (c) satellite meteorology; (d) satellite communications; and (e) space science. The working groups had drawn on the knowledge and the results of previous nine-month postgraduate courses, particularly those organized since 1996 at the Centre for Space Science and Technology Education in Asia and the Pacific and since 1998 at the African Centre for Space Science and Technology—in French Language and the African Regional Centre for Space Science and Technology Education—in English Language. The deliberations of the working groups and specifications for the curricula are contained in documents A/AC.105/L.238, A/AC.105/L.239, A/AC.105/L.240 and A/AC.105/L.241.

(d) Statement to be delivered at the World Summit on Sustainable Development

82. The Committee noted that the Scientific and Technical Subcommittee had recommended that a statement from the Committee be delivered at the World Summit on Sustainable Development, to be held in Johannesburg, South Africa, from 26 August to 4 September 2002, to highlight how space applications could contribute to promoting sustainable development. The Committee also noted that the Subcommittee had agreed upon an outline of the statement and on the format and the procedure for presenting the statement (A/AC.105/786, annex II, paras. 3-6 and appendix I, para. 23).

83. The Committee had before it the text of a statement presented on behalf of the Chairman of the Scientific and Technical Subcommittee to the Fourth Preparatory Committee for the World Summit on Sustainable Development, held in Bali, Indonesia, from 27 May to 7 June 2002 (A/AC.105/L.242).

84. The Committee reviewed and refined the text of the statement and agreed upon the final text of the statement to be presented on its behalf at the World Summit on Sustainable Development. The final text of the statement is contained in annex III to the present report.

(e) International Satellite System for Search and Rescue (COSPAS-SARSAT)

85. It was recalled that, at its forty-fourth session, the Committee had agreed that a report on the activities of the International Satellite System for Search and Rescue (COSPAS-SARSAT) should be considered annually by the Committee as a part of its consideration of the United Nations Programme on Space Applications and that member States should report on their activities regarding COSPAS-SARSAT.[5]

86. An excellent presentation on COSPAS-SARSAT was made by D. Levesque of COSPAS-SARSAT.

87. The Committee noted with satisfaction that COSPAS-SARSAT, a cooperative venture involving Canada, France, the Russian Federation and the United States to use space technology to assist aviators and mariners in distress around the globe, was celebrating its twentieth anniversary. Since its establishment, COSPAS-SARSAT had defined the technical characteristics of emergency beacons to help ensure the use of one common standard worldwide and had expanded its space segment to include instruments in the geostationary orbit in order to provide almost instantaneous distress alerts. Its membership had expanded to include 34 States from almost every continent. COSPAS-SARSAT had assisted in the rescue of over 13,000 persons since it began operating in 1982; that number was increasing by about 100 persons each month.

88. The Committee recognized the extraordinary success of COSPAS-SARSAT during its 20 years of service to the global community and recommended that, to commemorate its achievements, a paragraph on that international cooperative venture be included in

the draft resolution entitled "International cooperation on the peaceful uses of outer space" to be considered by the General Assembly at its fifty-seventh session.

2. Matters relating to remote sensing of the Earth by satellite, including applications for developing countries and monitoring of the Earth's environment

89. The Committee noted that, in accordance with General Assembly resolution 56/51, the Scientific and Technical Subcommittee had continued its consideration of matters relating to remote sensing of the Earth by satellite. The Committee took note of the discussion of the Subcommittee under that agenda item, as reflected in the report of the Subcommittee (A/AC.105/786, paras. 56-64).

90. The Committee emphasized the importance of remote sensing technology for sustainable development. In that connection, it also emphasized the importance of providing non-discriminatory access to state-of-the-art remote sensing data and to derived information at reasonable cost and in a timely manner.

91. The Committee emphasized the importance of building capacity in the adoption and use of remote sensing technology, in particular to meet the needs of developing countries.

92. The view was expressed that the Subcommittee should hold a series of conferences on radar remote sensing and that it should hold the first jointly with the Remote Sensing Centre in Saudi Arabia, if possible by the end of the year 2003.

3. Use of nuclear power sources in outer space

93. The Committee noted that, in accordance with General Assembly resolution 56/51, the Scientific and Technical Subcommittee had continued its consideration of the item relating to the use of nuclear power sources in outer space.

94. The Committee noted with satisfaction that the Subcommittee had reconvened the Working Group on the Use of Nuclear Power Sources in Outer Space, which, in accordance with the four-year work plan adopted by the Subcommittee at its thirty-fifth session (A/AC.105/697 and Corr.1, annex III, appendix), had finalized and adopted its report to the Subcommittee entitled "A review of international documents and national processes potentially relevant to the peaceful uses of nuclear power sources in outer space" (A/AC.105/781).

95. The Committee took note of the discussions of the Subcommittee and its Working Group on the Use of Nuclear Power Sources in Outer Space, as reflected in the report of the Subcommittee and in the report of the Working Group (A/AC.105/786, paras. 65-77 and annex III).

96. The Committee noted that, as requested by the Scientific and Technical Subcommittee (A/AC.105/786, para. 77), the Working Group was developing a set of potential options for consideration by the Subcommittee on any additional steps that might be deemed appropriate with regard to space nuclear power sources. The Committee noted with appreciation that the Working Group had had an opportunity to conduct informal consultations in parallel with the current session of the Committee to further its work on that important topic.

97. The Committee agreed that, even if the opening of discussions with a view to revising the Principles Relevant to the Use of Nuclear Power Sources in Outer Space (General Assembly resolution 47/68) was not necessary at the current stage, it was important that States making use of nuclear power sources should conduct their activities in full accordance with the Principles.

98. The Committee also agreed that the Subcommittee and the Working Group should continue to receive the widest input on matters affecting the use of nuclear power sources in outer space and any contribution related to improving the scope and application of the Principles.

99. The view was expressed that it was natural for the Committee to cooperate with IAEA in developing standards governing the use of nuclear power sources in outer space.

100. The view was expressed that nuclear power sources should not be used in outer space.

4. Means and mechanisms for strengthening inter-agency cooperation and increasing the use of space applications and services within and among entities of the United Nations system

101. The Committee noted that, in accordance with General Assembly resolution 56/51, the Scientific and

Technical Subcommittee had continued to consider an item on means and mechanisms for strengthening inter-agency cooperation and increasing the use of space applications and services within and among entities of the United Nations system. The Committee noted that, in accordance with the three-year work plan adopted by the Subcommittee at its thirty-seventh session (A/AC.105/736, annex II, para. 40), the Subcommittee had identified the barriers to the greater use of space applications and services within the United Nations system and examined specific means and mechanisms to eliminate those barriers. The Committee took note of the discussion of the Subcommittee on this item, as reflected in the report of the Subcommittee (A/AC.105/786, paras. 78-90).

102. The Committee noted with satisfaction that the Inter-Agency Meeting on Outer Space Activities had held its twenty-second session in Rome from 23 to 25 January 2002 and that the report on its work (A/AC.105/779) and the report of the Secretary-General on the coordination of outer space activities within the United Nations system: programme of work for 2002 and 2003 and future years (A/AC.105/780) were before the Committee.

103. The Committee noted that the next session of the Inter-Agency Meeting was scheduled to be held in Vienna from 22 to 24 January 2003.

5. Implementation of an integrated, space-based global natural disaster management system

104. The Committee noted that, in accordance with General Assembly resolution 56/51, the Scientific and Technical Subcommittee had continued to consider an item on implementation of an integrated, space-based global natural disaster management system. The Committee noted that, in accordance with the three-year work plan adopted by the Subcommittee at its thirty-seventh session (A/AC.105/736, annex II, para. 41), the Subcommittee had reviewed existing and proposed satellite and data distribution systems that could be used operationally for disaster management and had identified gaps in those systems. The Committee took note of the discussion of the Subcommittee on this item, as reflected in the report of the Subcommittee (A/AC.105/786, paras. 91-111).

105. The Committee stressed the importance of operational access to global satellite databases for preventing natural disasters, especially in developing countries, and the need to identify and close gaps in the coverage of remote sensing satellites so that reliable information could be provided to all disaster-affected areas.

6. Space debris

106. The Committee noted that, in accordance with General Assembly resolution 56/51, the Scientific and Technical Subcommittee had started a new multi-year work plan under the agenda item on space debris. The Committee noted that, in accordance with the work plan adopted by the Subcommittee at its thirty-eighth session (A/AC.105/761, para. 130), the Subcommittee had focused its discussion on space debris impact hazards and shielding. The Committee took note of the discussion of the Subcommittee on space debris, as reflected in the report of the Subcommittee (A/AC.105/786, paras. 112-126).

107. The Committee agreed with the Scientific and Technical Subcommittee that consideration of space debris was important, that international cooperation was needed to expand appropriate and affordable strategies to minimize the potential impact of space debris on future space missions and that Member States should pay more attention to the problem of collisions of space objects, including those with nuclear power sources on board, with space debris and to other aspects of space debris (A/AC.105/786, para. 118), in accordance with General Assembly resolution 56/51.

108. The Committee noted with satisfaction that, at the invitation of the Scientific and Technical Subcommittee, a representative of the Inter-Agency Space Debris Coordination Committee (IADC) had made a technical presentation to the Subcommittee on its activities and its views, with particular regard to the IADC mitigation guidelines. The Committee also noted that, in accordance with its work plan on space debris (A/AC.105/761, para. 130), the Subcommittee had invited IADC to present its proposals on debris mitigation, based on consensus among the IADC members, at the fortieth session of the Subcommittee, in 2003.

109. The Committee noted that IADC had reached ad referendum consensus among its delegates on proposed debris mitigation guidelines, which were undergoing final review by IADC members.

110. Some delegations expressed the view that, in order to ensure the implementation of the IADC recommendations by the international community, the Committee should, at its forty-sixth session, in 2003, develop a work plan according to which the Legal Subcommittee would be requested to prepare a declaration on principles of space debris mitigation.

111. The view was expressed that guidelines and recommendations for debris mitigation on a voluntary basis were not sufficient and that legally binding measures were needed. In the view of that delegation, that need was clearly demonstrated by the fact that, out of 14 satellites in geostationary orbit that had reached the end of their active lives in 2001, only two had been re-orbited according to the IADC recommendation, while the remaining 12 had been either left in the geostationary orbit or moved by an insufficient altitude increment.

112. The view was expressed that mitigation of space debris was also complicated by the fact that there was no official information available on which satellites were active and which had already come to the end of their active lives. In the view of that delegation, only launching States could designate a specific object officially inactive and they should be encouraged to announce that change in the status of their objects under the provisions of the Convention on Registration of Objects Launched into Outer Space (the "Registration Convention", General Assembly resolution 3235 (XXIX), annex).

113. The view was expressed that information on predicted space debris impacts should be included on the web site of the Office for Outer Space Affairs.

7. Examination of the physical nature and technical attributes of the geostationary orbit and of its utilization and applications, including, inter alia, in the field of space communications, as well as other questions relating to developments in space communications, taking particular account of the needs and interests of developing countries

114. The Committee noted that, in accordance with General Assembly resolution 56/51, the Subcommittee had continued its consideration of the item on the geostationary orbit and space communications as a single issue/item for discussion. The Committee took note of the discussion of the Subcommittee under that agenda item, as reflected in the report of the Subcommittee (A/AC.105/786, paras. 127-134).

8. International cooperation in limiting obtrusive space advertising that could interfere with astronomical observations

115. The Committee noted that, in accordance with General Assembly resolution 56/51, the Subcommittee had considered an item on international cooperation in limiting obtrusive space advertising that could interfere with astronomical observations as a single issue/item for discussion. The Committee took note of the discussion of the Subcommittee under this agenda item, as reflected in the report of the Subcommittee (A/AC.105/786, paras. 135-142).

9. Mobilization of financial resources to develop capacity in space science and technology applications

116. The Committee noted that, in accordance with General Assembly resolution 56/51, the Subcommittee had considered an item on mobilization of financial resources to develop capacity in space science and technology applications as a single issue/item for discussion. The Committee took note of the discussion of the Subcommittee under this agenda item, as reflected in the report of the Subcommittee (A/AC.105/786, paras. 143-147).

10. Draft provisional agenda for the fortieth session of the Scientific and Technical Subcommittee

117. The Committee noted that, in accordance with General Assembly resolution 56/51, the Scientific and Technical Subcommittee had endorsed the recommendations of its Working Group of the Whole concerning the draft provisional agenda for the fortieth session of the Subcommittee (A/AC.105/786, paras. 148 and 149).

118. The Committee endorsed the recommendation of the Scientific and Technical Subcommittee that the organization of the symposium by COSPAR and IAF and the industry symposium should alternate each year, starting in 2003. In the year 2003, the symposium by COSPAR and IAF would be organized and the organization of the industry symposium would be suspended. In the year 2004, the industry symposium would be organized and the organization of the symposium by COSPAR and IAF would be suspended.

Thereafter, the normal practice of holding both symposiums during the annual sessions of the Subcommittee would be re-examined (A/AC.105/786, annex II, para. 33).

119. The Committee endorsed the recommendation of the Scientific and Technical Subcommittee that COSPAR and IAF, in liaison with member States, should be invited to arrange a symposium on applications of satellite navigation and their benefits to developing countries, with as wide a participation as possible, to be held during the first week of the fortieth session of the Subcommittee (A/AC.105/786, annex II, para. 34).

120. The Committee noted that the Scientific and Technical Subcommittee had agreed that the Chairman of the Subcommittee should develop alternative possibilities to further improve the work of the Subcommittee, for consideration by the Committee at its forty-fifth session (A/AC.105/786, para. 152).

121. The Chairman of the Scientific and Technical Subcommittee, mindful of the substantial activity of the action teams for the implementation of UNISPACE III recommendations, the need to prepare a report on the implementation of those recommendations, to be considered by the General Assembly at its fifty-ninth session, in 2004, and the general desire of member States to maintain the substance of business of the Subcommittee, proposed that attention be focused on organizing the business of the Subcommittee so as to further enhance the efficiency and effectiveness with which it was conducted. The Chairman of the Subcommittee noted that the ability to do that would depend to a large extent on whether delegates would provide constructive feedback, prepare carefully for meetings and be ready to make statements within the time allocated for each agenda item. The Chairman of the Subcommittee expressed his desire to work with delegates and the Office for Outer Space Affairs to ensure that all participants felt that their time at meetings was well spent.

122. Some delegations expressed the view that the agenda of the Committee and the agenda of each of its subcommittees should be considered in a more efficient manner, in order that the duration of the sessions of those bodies could be gradually reduced.

123. Other delegations expressed the view that there should not be any reduction in the duration of sessions of the Committee or its subcommittees, since the work of those bodies had been revitalized in recent years, among other things through the UNISPACE III action teams, and also because a reduction in the duration of sessions could lead to a permanent budget reduction for the Office for Outer Space Affairs.

124. The view was expressed that the special presentations made to the Scientific and Technical Subcommittee on a wide variety of topics, including those made by non-governmental entities, were important because they increased the technical content of the deliberations and provided timely information on new developments in space activities.

125. The Committee agreed upon the following draft provisional agenda for the fortieth session of the Scientific and Technical Subcommittee:

1. General exchange of views and introduction to reports submitted on national activities.
2. United Nations Programme on Space Applications.
3. Implementation of the recommendations of the Third United Nations Conference on the Exploration and Peaceful Uses of Outer Space (UNISPACE III).
4. Matters relating to remote sensing of the Earth by satellite, including applications for developing countries and monitoring of the Earth's environment.
5. Items to be considered under work plans:
   (a) Use of nuclear power sources in outer space;

   (Fourth year of the work plan: the Scientific and Technical Subcommittee determines whether or not to take any additional steps concerning the information in the report of the Working Group on the Use of Nuclear Power Sources in Outer Space.)[6]

   (b) Means and mechanisms for strengthening inter-agency cooperation and increasing the use of space applications and services within and among entities of the United Nations system;

(Third year of the work plan: specific, concrete proposals and, as appropriate, action plans are developed for strengthening inter-agency cooperation in the use of space within the United Nations system and for increasing the use of space applications and services within the system in general and among particular United Nations entities.)[7]

(c) Implementation of an integrated, space-based global natural disaster management system;

(Third year of the work plan: the Scientific and Technical Subcommittee reviews possible global operational structures to handle natural disaster management, making maximum use of existing and planned space systems.)[8]

(d) Space debris.

(Second year of the work plan: the Inter-Agency Space Debris Co-ordination Committee (IADC) presents to the Scientific and Technical Subcommittee its proposals on debris mitigation, based on consensus among the IADC members; member States review the IADC proposals on debris mitigation and discuss the means of endorsing their utilization.)[9]

6. Single issues/items for discussion:

(a) Examination of the physical nature and technical attributes of the geostationary orbit and its utilization and applications, including, inter alia, in the field of space communications, as well as other questions relating to developments in space communications, taking particular account of the needs and interests of developing countries;

(b) Mobilization of financial resources to develop capacity in space science and technology applications;

(c) The use of space technology for the medical sciences and public health.

7. Draft provisional agenda for the forty-first session of the Scientific and Technical Subcommittee, including identification of subjects to be dealt with as single issues/items for discussion or under multi-year work plans.

8. Report to the Committee on the Peaceful Uses of Outer Space.

D. Report of the Legal Subcommittee on its forty-first session

126. The Committee took note with appreciation of the report of the Legal Subcommittee on its forty-first session (A/AC.105/787), which contained the results of its deliberations on the items assigned to it by the General Assembly in resolution 56/51.

127. The Committee welcomed the announcement of the first United Nations Workshop on Capacity-Building in Space Law, to be organized by the Secretariat in cooperation with the International Institute of Air and Space Law of the University of Leiden and the Government of the Netherlands and to be held in The Hague from 18 to 21 November 2002.

1. Status and application of the five United Nations treaties on outer space

128. The Committee noted that, in accordance with General Assembly resolution 56/51, the Legal Subcommittee had considered the status and application of the five United Nations treaties on outer space as a regular item and had established a new working group on the item under the chairmanship of Vassilios Cassapoglou (Greece).

129. The Committee noted that the Legal Subcommittee had been provided with a report on the current status of signatures and ratifications of the international treaties governing the use of outer space, in accordance with information provided to the Secretariat by the depositaries of those treaties.

130. The Committee noted that some delegations had informed the Legal Subcommittee of the current status of and further intended actions concerning their accession to the five United Nations treaties on outer space. Similar information was submitted to the Committee by other delegations.

131. The view was expressed that the main task for the Subcommittee and its working group under this item would be to develop all possible efforts to encourage States that had not yet adhered to the United Nations treaties on outer space to consider doing so as soon as possible.

132. The view was expressed that the outer space treaties had continued to function well in an increasingly complex environment and had provided a valuable framework that had facilitated the growth in activities of both governmental and private entities in outer space. That delegation believed that the Committee should call on all States to ratify and implement what that delegation called "the four core space law instruments" and should encourage States that had accepted those instruments to examine their national laws to determine whether they were sufficient to implement them.

133. The view was expressed that only a small number of States had established national legal regimes to regulate the space-related activities of non-governmental entities. That delegation was of the view that the Committee should encourage States that had not done so to consider enacting appropriate laws and regulations for that purpose.

134. The Committee was informed of measures being undertaken by the United States to upgrade and make more accessible its national registry of space objects, maintained in accordance with the Registration Convention, as well as to clarify the domestic criteria for including space objects on that national registry. Included on the registry would be all space objects owned or operated by United States private or governmental entities and launched from inside or outside United States territory, as well as certain non-functioning space objects that had previously also been included on the registry. In general, non-domestic payloads launched from United States territory or facilities would not be included on the registry, as the United States was of the view that such payloads should be included on the national registry of the State of the payloads' owners or operators. The Committee was also informed of measures being undertaken by the United States to ensure a complete and accurate reflection in the Register maintained by the Secretary-General of the space objects carried on its national registry. The view was expressed that other States should undertake a similar clarification of their registration practice in order to enhance overall international practice for the benefit of all nations.

135. The view was also expressed that the promotion of increased international cooperation in the area of registration of space objects might be an appropriate activity for the Legal Subcommittee and the Office for Outer Space Affairs to undertake.

136. The view was expressed that the Committee should address practices by certain commercial non-governmental entities relating to the provision of remote sensing data to ensure conformity with the principle of non-discrimination embodied in the provisions of the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies (General Assembly resolution 2222 (XXXI), annex).

137. However, the view was expressed that it would be inappropriate for the Committee to express formal views on what were essentially the business practices of such commercial non-governmental entities.

2. Information on the activities of international organizations relating to space law

138. The Committee noted that, in accordance with General Assembly resolution 56/51, the Legal Subcommittee had considered information on the activities of international organizations relating to space law as a regular item.

139. The Committee noted with satisfaction that the Legal Subcommittee had been provided with reports from various invited international organizations on their activities relating to space law and endorsed the agreement by the Legal Subcommittee that the Secretariat should extend similar invitations to appropriate international organizations for the forty-second session of the Subcommittee, in 2003.

140. The view was expressed that the consideration of this regular item represented an innovation that had opened the deliberations of the Legal Subcommittee to a more substantive role by international organizations engaged in space-related activities and their active contribution to the progressive development of space law.

141. The Committee took note of the holding during the present session of an informal meeting of the group of experts appointed by member States to examine the

report of the UNESCO World Commission on the Ethics of Scientific Knowledge and Technology (COMEST) on the ethics of space policy.

142. The view was expressed that the Committee should urge delegations to appoint experts to take part in that work, the results of which would be presented at the next session of the Subcommittee.

3. Matters relating to: (a) the definition and delimitation of outer space; and (b) the character and utilization of the geostationary orbit, including consideration of ways and means to ensure the rational and equitable use of the geostationary orbit without prejudice to the role of the International Telecommunication Union

143. The Committee noted that, in accordance with General Assembly resolution 56/51, the Legal Subcommittee had continued to consider as a regular item matters relating to: (a) the definition and delimitation of outer space; and (b) the character and utilization of the geostationary orbit, including consideration of ways and means to ensure the rational and equitable use of the geostationary orbit without prejudice to the role of the International Telecommunication Union.

144. The Committee noted that the Working Group on this item had been re-established under the chairmanship of Manuel Alvarez (Peru) to consider only matters relating to the definition and delimitation of outer space, in accordance with the agreement reached at the thirty-ninth session of the Legal Subcommittee and endorsed by the Committee at its forty-third session.

145. Some delegations reiterated the view that the lack of a definition and delimitation of outer space would bring about legal uncertainty with regard to space law and air law and should be clarified to reduce the possibility of disputes arising between States. The need for legal certainty in that regard had become more pertinent in view of innovations in the field of space transportation and rocket launch technologies.

146. The view was expressed that the geostationary orbit constituted an integral part of outer space.

147. Some delegations reiterated the view that the geostationary orbit was a limited natural resource with sui generis characteristics that risked saturation and that its utilization should be based on the principle of rational and equitable access for all countries, taking into account the special needs of developing countries and the geographical situation of particular countries.

4. Review and possible revision of the Principles Relevant to the Use of Nuclear Power Sources in Outer Space

148. The Committee noted that, in accordance with General Assembly resolution 56/51, the Legal Subcommittee had continued its consideration of the review and possible revision of the Principles Relevant to the Use of Nuclear Power Sources in Outer Space as a single issue/item for discussion.

149. The Committee noted that an exchange of views had taken place in the Legal Subcommittee on the review and possible revision of the Principles Relevant to the Use of Nuclear Power Sources in Outer Space, as reflected in its report (A/AC.105/787, paras. 72-78), in which reference was made to the work currently being undertaken by the Scientific and Technical Subcommittee under the item entitled "Use of nuclear power sources in outer space".

5. Consideration of the Convention on International Interests in Mobile Equipment (opened to signature in Cape Town on 16 November 2001) and the preliminary draft Protocol on Matters Specific to Space Assets

150. The Committee noted that, in accordance with General Assembly resolution 56/51, the Legal Subcommittee had considered the single issue/item for discussion entitled "Consideration of the Convention on International Interests in Mobile Equipment (opened to signature in Cape Town on 16 November 2001) and the preliminary draft Protocol on Matters Specific to Space Assets".

151. The Committee noted with satisfaction that, pursuant to the agreement reached at its forty-fourth session, an ad hoc consultative mechanism had been established to review issues relevant to this item. The Committee also noted that, within the framework of the ad hoc consultative mechanism, intersessional meetings had been hosted by the Government of France in Paris on 10 and 11 September 2001 and by the Government of Italy in Rome on 28 and 29 January 2002. The Committee expressed its appreciation to the Governments of France and Italy for hosting the

intersessional meetings of the ad hoc consultative mechanism.

152. Some delegations reiterated the view that the Convention and the preliminary draft protocol should neither undermine nor compromise existing principles of international space law and that, in case of a conflict, the latter principles should prevail.

153. Some delegations expressed the view that the inclusion within the preliminary draft protocol of an appropriate safeguard clause recognizing the primacy of the existing principles of international space law would be necessary in order to ensure that the principles were in no way compromised. The view was expressed that the reliable operation of the Supervisory Authority and the Registrar would also contribute to ensuring the continuing integrity of existing principles of international space law.

154. The view was expressed that it would be premature to address the issue of the primacy of existing international space law principles until the text of the preliminary draft protocol was finalized.

155. Some delegations reiterated the view that the Convention and the preliminary draft protocol on matters specific to space assets had significant potential to facilitate the development of commercial activities in outer space by enhancing the availability of commercial financing for such activities, thereby bringing benefits to countries at all levels of economic and technological development.

156. Some delegations reiterated the view that the role of the Supervisory Authority envisaged in the Convention and the preliminary draft protocol should be entrusted to an international intergovernmental organization of high repute and could appropriately be assumed by the United Nations or one of its organs.

157. The view was expressed that, if the United Nations was to assume the role of the Supervisory Authority, it should enjoy the full extent of privileges and immunities provided for by the Convention on the Privileges and Immunities of the United Nations (General Assembly resolution 22 A (I)), and its expenses should be fully reimbursed by the parties to the Convention on International Interests in Mobile Equipment and the future protocol.

158. The view was expressed that the Secretary-General of the United Nations could be designated as the Supervisory Authority and the performance of its functions entrusted to the Office for Outer Space Affairs. That delegation noted the registry functions already being carried out by the Office on behalf of the Secretary-General in connection with the Convention on Registration of Objects Launched into Outer Space and the experience of the Office in activities relating to registration.

159. Some delegations reiterated the view that a number of substantive issues relating to the Convention on International Interests in Mobile Equipment and the preliminary draft protocol required further consideration, taking into full account the rights and obligations of States under the existing international space treaties. Of particular concern were issues relating to: (a) international responsibility and liability for space activities and the effective control and continuing supervision by States of such activities; and (b) the financing of space assets that provided public services or utilized dual-use technologies.

160. The view was expressed that, since no item to be considered under a work plan had been envisaged for the Legal Subcommittee's forty-second session, in 2003, the Subcommittee would have ample opportunity to seek to resolve the key issues relating to the Convention and the preliminary draft protocol.

161. The view was expressed that, while the preliminary draft protocol would soon be transmitted to Governments by the International Institute for the Unification of Private Law (Unidroit) with a view to convening a Committee of Governmental Experts in late 2002, the Committee on the Peaceful Uses of Outer Space and its Legal Subcommittee had a continuing role to fulfil in the further development of the preliminary draft protocol. Therefore that delegation favoured retaining the item on the agenda of the Legal Subcommittee for its forty-second session, in 2003, and, more generally, until the preliminary draft protocol had been fully developed and finalized.

162. However, the view was expressed that the interests of financial bodies was only one aspect of space activities and should essentially be dealt with within the scope of national space laws and existing commercial practices. Therefore, that delegation had reservations about the Legal Subcommittee continuing to consider that topic beyond its forty-second session, in 2003.

163. The Committee agreed to the continued consideration of the item by the Legal Subcommittee at its forty-second session, in 2003, in the form and manner proposed by the Subcommittee, as reflected in paragraph 137 of the report of the Subcommittee on its forty-first session (A/AC.105/787).

6. Review of the concept of the "launching State"

164. The Committee noted that, pursuant to General Assembly resolution 56/51, the Legal Subcommittee had continued its review of the concept of the "launching State" in accordance with the three-year work plan agreed upon by the Committee at its forty-second session.[10]

165. The Committee noted that the Legal Subcommittee had, in accordance with its three-year work plan, re-established a working group, under the chairmanship of Kai-Uwe Schrogl (Germany), to consider that item.

166. The Committee expressed its appreciation to the Working Group and its Chairman for having successfully completed the three-year work plan, as well as for the conclusions of the Working Group, reflected in the report of the Working Group (A/AC.105/787, annex IV).

167. The view was expressed that even though the conclusions of the Working Group did not constitute or contain an authoritative interpretation of or proposed amendments to the Registration Convention and the Convention on International Liability for Damage Caused by Space Objects (General Assembly resolution 2777 (XXVI), annex), they were of great value in clarifying some of the main legal questions raised by the evolution of launch practices, the commercialization of related activities and private involvement in that sector. That delegation fully supported the recommendations contained in the conclusions, in particular the recommendation that States consider the conclusion of agreements in accordance with the Liability Convention for each stage of a mission in the case of joint launches or cooperation programmes, so as to clearly determine the extent of actual liability of all parties to the launch.

168. The view was expressed that the main conclusions of the Working Group should be included in the current report of the Committee to the General Assembly.

169. The Committee took note of the major recommendations of the Working Group, as follows:

(a) The Working Group recommended that States conducting space activities consider steps to implement national laws to authorize and provide continuing supervision of the activities of their nationals in outer space and to implement their international obligations under the Liability Convention, the Registration Convention and other international agreements. The Working Group noted that the implementation of national legal provisions on space could benefit the country concerned in ways such as: (a) effecting the country's jurisdiction and control over the space object; (b) reducing the risk of launch accidents and other damage in connection with space activities; (c) providing fast and effective compensation for such damage; and (d) providing mechanisms for a government that is internationally liable under the Liability Convention to receive indemnification from any non-governmental entities that caused the damage. The Working Group noted that the Office for Outer Space Affairs could serve as a resource for legal information and assistance for countries seeking to develop national space laws, in particular developing countries;

(b) The Working Group recommended, following common practice, that States consider the conclusion of agreements in accordance with article V, paragraph 2, of the Liability Convention for each stage of a mission with respect to joint launches or cooperation programmes;

(c) The Working Group recommended the consideration of harmonizing voluntary practices that would provide useful guidance in a practical context to national bodies implementing the United Nations treaties on outer space. Agreements or informal practices to streamline the separate space licensing procedures of various States involved in a launch might reduce insurance costs and regulatory burdens for private industry and regulatory costs for governments. For instance, it might be valuable to consider ways of reducing the number of countries that set duplicate third-party insurance requirements for a particular launch or launch stage. States could also consider voluntary harmonized practices regarding on-orbit transfer of ownership of spacecraft. In general, such practices would increase the consistency and predictability of national space laws and help avoid

lacunae in the implementation of the treaties. The Working Group noted that voluntary harmonized practices could be considered on a bilateral or multilateral basis, or on a global basis through the Untied Nations.

170. Some delegations expressed support for the proposal that the conclusions of the Working Group should form the basis for a separate General Assembly resolution on recommendations concerning the implementation of the concept of the "launching State".

171. Some delegations welcomed the agreement by the Legal Subcommittee that issues relating to the concept of the "launching State" would continue to be considered and reviewed as part of the widened mandate of the Working Group established under the item, entitled "Status and application of the five United Nations treaties on outer space". The view was expressed that that continued consideration should include the drafting of the basis for a separate General Assembly resolution on recommendations concerning the implementation of the concept of the "launching State".

7. Draft provisional agenda for the forty-second session of the Legal Subcommittee

172. The Committee noted that, in accordance with General Assembly resolution 56/51, the Legal Subcommittee had considered an item entitled "Proposals to the Committee on the Peaceful Uses of Outer Space for new items to be considered by the Legal Subcommittee at its forty-second session".

173. The Committee noted that a substantial exchange of views had taken place in the Legal Subcommittee on numerous proposals by member States for new agenda items and that agreement had been reached on a proposal to the Committee for the agenda of the forty-second session of the Subcommittee, in 2003, as reflected in its report (A/AC.105/787, paras. 131-142).

174. Some delegations reiterated the view that the appropriateness and desirability of drafting a universal comprehensive convention on international space law should be considered by the Legal Subcommittee under a sub-item of the agenda item entitled "Status and application of the five United Nations treaties on outer space", as had been proposed to the Legal Subcommittee in a working paper submitted by China, Greece and the Russian Federation (A/AC.105/C.2/L.236). Those delegations expressed the view that such a universal comprehensive convention would help to close the gaps within the current international space law system, without undermining the existing treaties. The view was also expressed that such a project would enhance the impetus of the Legal Subcommittee in adequately addressing the legal implications of the rapid advances and changes in the field of modern space activity.

175. However, the view was reiterated that the United Nations treaties and principles on outer space were continuing to meet the need for a broad and flexible structure to accommodate rapidly changing technology and had together established a framework within which outer space activities had flourished. A single, comprehensive convention on outer space was therefore neither necessary nor feasible. That delegation also expressed concern that initiating consideration of the desirability of such a treaty would call into question the ongoing viability of the existing treaties and undermine the efforts by the Committee to encourage ratification and adherence to those treaties.

176. Some delegations noted the analysis carried out by the European Centre for Space Law on the legal aspects of space debris as reported to the forty-first session of the Legal Subcommittee and expressed the view that, while the work currently being carried out by the Scientific and Technical Subcommittee and IADC should be fully supported, it would also be highly desirable for a declaration of principles relating to the prevention of space debris to be drafted and adopted as soon as possible. The view was expressed that the Legal Subcommittee should commence that work in 2004, following the conclusion of the work of the Scientific and Technical Subcommittee.

177. The view was expressed that, although the Legal Subcommittee had been unable to reach consensus on the inclusion of any new items in its agenda, there were several topics that merited the attention of the Subcommittee and should be considered at its upcoming sessions. One such topic was the legal aspects of space debris. That delegation was of the view that an analysis by the European Centre for Space Law had provided valuable insight and raised several questions that could serve as the starting point for further discussion within the Legal Subcommittee.

178. On the basis of the deliberations of the Legal Subcommittee at its forty-first session and the discussions reflected in paragraphs 172-177 above, the Committee agreed on the following draft provisional agenda for the forty-second session of the Legal Subcommittee, in 2003:

Regular items

1. Opening of the session and adoption of the agenda.
2. Statement by the Chairman.
3. General exchange of views.
4. Status and application of the five United Nations treaties on outer space.
5. Information on the activities of international organizations relating to space law.
6. Matters relating to:
   (a) The definition and delimitation of outer space;
   (b) The character and utilization of the geostationary orbit, including consideration of ways and means to ensure the rational and equitable use of the geostationary orbit without prejudice to the role of the International Telecommunication Union.

Single issues/items for discussion

7. Review and possible revision of the Principles Relevant to the Use of Nuclear Power Sources in Outer Space.
8. Examination of the preliminary draft protocol on matters specific to space assets to the Convention on International Interests in Mobile Equipment (opened to signature in Cape Town on 16 November 2001):
   (a) Considerations relating to the possibility of the United Nations serving as Supervisory Authority under the preliminary draft protocol;
   (b) Considerations relating to the relationship between the terms of the preliminary draft protocol and the rights and obligations of States under the legal regime applicable to outer space.

Agenda items considered under work plans

[none]

New items

9. Proposals to the Committee on the Peaceful Uses of Outer Space for new items to be considered by the Legal Subcommittee at its forty-third session.

E. Spin-off benefits of space technology: review of current status

179. In accordance with General Assembly resolution 56/51, the Committee resumed its consideration of the item entitled "Spin-off benefits of space technology: review of current status".

180. The publication *Spinoff 2001*, submitted by the National Aeronautics and Space Administration (NASA) of the United States, was made available to the Committee.

181. The Committee agreed that spin-offs of space technology were yielding many substantial benefits. It took note of the efforts of many countries to promote spin-off benefits and to disseminate information on the subject to other interested countries. The Committee also noted that utilization of space technology had become an efficient way to advance economic development, especially in developing countries.

182. The Committee noted that spin-off technologies had resulted in the development or improvement of many products and processes. A new diagnostic tool for cardiac patients, a monitor providing highly accurate data on a patient's total blood circulation, had become available in the health and medical sector. The monitor, based on technology known as impedance cardiography, provided vital information about the heart's ability to deliver blood to the body, the force exerted by the heart with each beat and the amount of fluid in the chest.

183. The Committee also noted that a microscope supporter for brain surgery, an application of X-ray observation technology, was allowing surgeons to perform delicate and accurate operations for longer periods of time by simulating a sense of weightlessness while operating the machine.

184. The Committee noted the current focus on the transfer of knowledge acquired through space research for specific diagnostic, therapeutic, preventive and biotechnological applications. The Committee noted that pilot projects such as "Space for Health" were being implemented in the framework of the recent Italian "Marco Polo" mission, aimed at using space medicine for promoting health and improving the quality of life on Earth and involving training and rehabilitation processes that could become especially relevant for elderly people.

185. The Committee noted applications of space technology in the field of public safety, including an advanced digital surveillance tool with the capability of processing video images with up to 200 frames per second, faster than most video systems currently on the market. The system used motion detection for around-the-clock monitoring and would benefit industries relying on clear, fast and accurate images in their daily operations.

186. The Committee also noted that an accumulator rubber earthquake force isolator, developed from research conducted on the basement parts of launcher boosters, was being set between buildings and their basements to act as isolators to prevent the direct transmission of earthquake forces to the buildings.

187. The Committee noted applications of space technology in the food industry. An ethylene filtration system, developed for plant growth experiments in space, was being used for air purification. The system was capable of killing 93 per cent of all airborne pathogens and increased the shelf life of perishable foods by more than one week.

188. The Committee noted environmental benefits of spin-off technologies, including a super-insulating, flexible and translucent material called aerogel. Aerogel could withstand extreme temperatures and had thermal insulation, as well as sound- and shock-absorbing characteristics, making it well suited for appliances and clothing. Widespread use of aerogel in homes and buildings could significantly reduce global energy consumption and greenhouse gas emissions. The Committee also noted the development of solar batteries with radio resistance and high conversion efficiency, for use in private homes in high-performance silicon solar battery panels.

189. The Committee noted that the European civil navigation and positioning system, Galileo, would be operational in 2008 and would benefit fields such as transport, engineering, agriculture and mining, as well as search and rescue. The system would be relevant to several categories of professional and government users and users from the general public, for whom access would be free in the case of basic services and controlled in the case of other services.

190. The view was expressed that, to build national capacity, it was necessary to intensify efforts to disseminate information on and promote understanding of the benefits of space science and technology and its applications at all levels of society.

191. The view was expressed that, to promote and increase the development of innovative and sophisticated technologies resulting from space programmes, it was necessary to transfer those technologies to non-space-related sectors.

192. The Committee recommended that it should continue its consideration of the item at its forty-sixth session, in 2003.

F. Space and society

193. In accordance with General Assembly resolution 56/51, the Committee began consideration of an item entitled "Space and society".

194. The Committee heard the following:

(a) Presentation entitled "Astrobiology, the scientific search for life in the universe" by P. Mercader of Spain;

(b) Presentation entitled "From Sputnik to Star Trek: two views on space and society" by E. Pulham of the United States;

(c) Presentation and demonstration of the EDUSPACE web site by J. Lichtenegger of the European Space Agency.

195. The Committee noted that outer space influenced human society in many ways. Services from outer space, such as remote sensing, telecommunications and navigation systems, were improving the lives of people throughout the world and helping to create a global society. Microgravity experiments were allowing

biology, fluid physics and other sciences to be explored in ways not possible on Earth.

196. The Committee noted that research and exploration in outer space were addressing fundamental scientific questions and were a source of inspiration for people in all countries. The first pictures of the Earth from outer space had also profoundly changed people's view of the planet, giving them a global perspective and a greater appreciation for the global environment.

197. The Committee noted that outer space was an important theme in all cultures and had sparked creativity in art, music, film and literature.

198. The Committee noted that outer space was a theme that could attract children to science and mathematics and could increase the number of professionals entering those fields.

199. The Committee stressed the importance of education in space science and engineering, through both government and private activities, since the need for professionals in those fields was rapidly growing.

200. The Committee noted the contribution that was being made by regional centres for space science and technology education, established on the basis of affiliation with the United Nations in Africa, Asia and the Pacific, and Latin America and the Caribbean, as well as the Network of Space Science and Technology Education and Research Institutions for Central Eastern and South-Eastern Europe. The Committee also took note of other important initiatives to promote space science and technology education on the national and regional levels.

201. The Committee noted that World Space Week, observed each year from 4 to 10 October pursuant to General Assembly resolution 54/68 of 6 December 1999, was a good opportunity to raise awareness about outer space, in particular among young people.

202. The view was expressed that the Committee should consider ways of ensuring that qualified professionals in space science and engineering were available in all regions and countries, and not just in a few countries with advanced space capabilities. For instance, the participation of countries with lower space technology potential in international space missions and projects could be developed as a way of building global capacity.

203. The Committee noted that a workshop on the theme "Bringing space down to Earth: the impact of new technology on distance learning" had been held on 12 and 13 June, in parallel with its forty-fifth session. At the workshop, organized by EURISY in cooperation with the Austrian Space Agency and ESA, participants had reviewed the latest technological developments and practical applications in the field of distance education.

204. The Committee took note of several national initiatives to promote space science and technology education for young people, including the Global Learning and Observations to Benefit the Environment (GLOBE) programme, a worldwide, student-teacher-scientist partnership involving more than 11,000 schools and 19,000 teachers in over 95 countries, major activities of China for World Space Week, Space Camp Turkey and new software for remote sensing education developed by the Romanian Space Agency and ESA.

205. The Committee noted that, in addition to the many ways in which space was benefiting society, there was the danger that space could also be used to transmit information for undesirable purposes and could potentially be used for the deployment of weapons of war. Society and policy makers should consider the impact, both positive and negative, of rapid development in scientific fields, in order to further the goal of promoting peace and improving the welfare of all people.

206. The Committee recommended that it should continue its consideration of the item at its forty-sixth session, in 2003.

G. Other matters

1. Composition of the bureaux of the Committee and its subsidiary bodies for the third three-year term

207. The Committee noted that the General Assembly, in its resolution 56/51, had agreed that, in accordance with the measures relating to the working methods of the Committee and its subsidiary bodies,[11] which had been endorsed by the Assembly in paragraph 11 of its resolution 52/56 of 10 December 1997, the Committee should reach consensus agreement at its forty-fifth session on the composition of the bureaux of the

Committee and its subsidiary bodies for the third three-year term. For the bureau of the Committee the three-year term would start at its forty-sixth session, in 2003; for the bureau of the Scientific and Technical Subcommittee, the three-year term would start at its forty-first session, in 2004; and for the bureau of the Legal Subcommittee, the three-year term would start at its forty-third session, in 2004.

208. The Committee held informal consultations on the matter on 7 and 14 June 2002. The Second Vice-Chairman/Rapporteur of the Committee, Harijono Djojodihardjo (Indonesia), acted as the facilitator of the informal consultations.

209. The Committee noted that informal consultations had been held among the members of the Committee and the regional groups concerning the composition of the bureaux of the Committee and its subsidiary bodies for the third three-year term. The Committee further noted that additional consultations would be necessary in order to reach consensus. In that regard, the Committee agreed that intersessional informal consultations, including the chairs of the regional groups and convened and facilitated by Austria, on the composition of the bureaux of the Committee and its subsidiary bodies for the third term would have to be held with a view to reaching consensus before the forty-sixth session of the Committee. Austria would report on the results of the consultations during the United Nations General Assembly at its next session.

2. Observer status

210. The Committee noted that two international non-governmental entities, the Committee on Earth Observation Satellites (CEOS) and Spaceweek International Association (SIA), had applied for observer status with the Committee and that the related correspondence and statutes of those non-governmental entities had been made available during the present session of the Committee (A/AC.105/2002/CRP.3).

211. The Committee decided to grant permanent observer status to CEOS and SIA on the understanding that, in accordance with the agreement of the Committee at its thirty-third session concerning observer status for non-governmental organizations, CEOS and SIA would apply for consultative status with the Economic and Social Council.

3. Membership of the Committee

212. The Chairman of the Committee drew the attention of the Committee to paragraphs 40-42 of General Assembly resolution 56/51, concerning the membership of the Committee.

213. The Committee noted that Algeria, in a note verbale dated 21 March 2002, had applied for membership in the Committee. The request by Algeria for membership in the Committee had also been submitted to the Secretariat in a note verbale dated 8 June 2001. The Committee noted that the Group of 77 and China, the Group of African States and the Group of Latin American and Caribbean States, as well as other member States, had supported the request by Algeria for membership in the Committee. Communications received from regional groups, as well as those received from Burkina Faso, France and Jordan, supporting the request by Algeria for membership in the Committee were before the Committee (A/AC.105/2002/CRP.10).

214. The Committee also noted that the Libyan Arab Jamahiriya, in a note verbale to the Secretariat dated 13 May 2002, had applied for membership in the Committee. The Committee was further informed in a note verbale dated 14 June 2002 that the Group of African States had endorsed the candidature of the Libyan Arab Jamahiriya for membership in the Committee.

H. Schedule of work of the Committee and its subsidiary bodies

215. The Committee agreed on the following tentative timetable for its session and those of its subcommittees in 2003:

	Date	*Location*
Scientific and Technical Subcommittee	17-28 February 2003	Vienna
Legal Subcommittee	24 March-4 April 2003	Vienna
Committee on the Peaceful Uses of Outer Space	11-20 June 2003	Vienna

Notes

[1] *Report of the Third United Nations Conference on the Exploration and Peaceful Uses of Outer Space, Vienna, 19-30 July 1999* (United Nations publication, Sales No. E.00.I.3), chap. I, resolution 1.

[2] *Official Records of the General Assembly, Fifty-sixth Session, Supplement No. 20* and corrigendum (A/56/20 and Corr.1), paras. 50 and 55.

[3] United Nations publication, Sales No. E.02.I.6.

[4] United Nations publication, Sales No. E.02.I.9.

[5] *Official Records of the General Assembly, Fifty-sixth Session, Supplement No. 20* and corrigendum (A/56/20 and Corr.1), para. 220.

[6] A/AC.105/697 and Corr.1, annex III, appendix.

[7] A/AC.105/736, annex II, para. 40.

[8] A/AC.105/736, annex II, para. 41.

[9] A/AC.105/761, para. 130.

[10] *Official Records of the General Assembly, Fifty-fourth Session, Supplement No. 20* and corrigendum (A/54/20 and Corr.1), annex I, para. 3 (b).

[11] *Official Records of the General Assembly, Fifty-second Session, Supplement No. 20* (A/52/20), annex I.

Annex I

Report of the working group established under agenda item 5, entitled "Implementation of the recommendations of the Third United Nations Conference on the Exploration and Peaceful Uses of Outer Space (UNISPACE III)", to prepare a report to the General Assembly at its fifty-ninth session, in 2004

1. At its 488th meeting, on 5 June 2002, the Committee on the Peaceful Uses of Outer Space established a Working Group under agenda item 5, entitled "Implementation of the recommendations of the Third United Nations Conference on the Exploration and Peaceful Uses of Outer Space (UNISPACE III)", in accordance with paragraph 30 of General Assembly resolution 56/51 of 10 December 2001. At the 492nd meeting, on 7 June 2002, Niklas Hedman (Sweden) was elected Chairman of the Working Group.

2. The Working Group held six meetings, from 10 to 14 June 2002. At the 1st meeting of the Working Group, on 10 June 2002, the Chairman, in his opening remarks, reviewed the mandate of the Working Group. At its 6th meeting, on 14 June 2002, the Working Group adopted the present report.

3. The Working Group noted that in paragraph 30 of General Assembly resolution 56/51, the Assembly had requested the Committee to prepare a report under the agenda item on the implementation of the recommendations of UNISPACE III for submission to the Assembly, in order for the Assembly to review and appraise, at its fifty-ninth session, in 2004, in accordance with paragraph 16 of Assembly resolution 54/68, the implementation of the outcomes of UNISPACE III and to consider further actions and initiatives. The Working Group also noted that the Assembly, in paragraph 31 of its resolution 56/51, had also requested the Committee to submit for consideration by the Assembly at its fifty-seventh session recommendations on the format, scope and organizational aspects of the above-mentioned review by the Assembly.

4. The Working Group recalled the agreement reached by the Committee at its forty-third session, in 2000, concerning the working methods of the Committee for the implementation of the recommendations resulting from UNISPACE III. The Committee had agreed that its Scientific and Technical Subcommittee should be assigned the task of discussing and reaching a consensus on the implementation of the recommendations of UNISPACE III and reporting each year to the Committee on its findings and recommendations for final approval and/or modifications. The Committee had also agreed that the Subcommittee would discuss the matter through its Working Group of the Whole. With regard to its role, the Committee had agreed to consider matters relating to the implementation of the recommendations of UNISPACE III under a separate agenda item at its sessions held between 2001 and 2004.[a]

5. The Working Group also recalled that the Committee, at its forty-second session, in 1999, had agreed upon the revised structure of agendas of its Scientific and Technical Subcommittee and Legal Subcommittee.[b] The Working Group noted

with satisfaction that each of the subcommittees had introduced new items in its agenda, which had contributed to the implementation of the recommendations of UNISPACE III.

6. The Working Group further recalled that, at its forty-fourth session, the Committee had established 11 action teams to hold working meetings in Vienna or within the framework of international conferences to implement those UNISPACE III recommendations which had been assigned the highest priority by Member States and those for which an offer to be leader of the activity had been received.[c] The Working Group noted with satisfaction the work conducted by the action teams. The Working Group also noted that the objectives, work plans and final products to be delivered had been reported to the Scientific and Technical Subcommittee at its thirty-ninth session (A/AC.105/786, annex II, para. 7).

7. The Working Group agreed that its task would be to prepare the report referred to in paragraph 3 above for submission to the General Assembly at its fifty-ninth session, in 2004. The Working Group also agreed that the Scientific and Technical Subcommittee and its Working Group of the Whole, as well as the Legal Subcommittee, should provide their contributions to the report.

Expected outcome of the review by the General Assembly

8. The Working Group agreed that the review by the General Assembly would enable it to note the progress made in the implementation of the recommendations of UNISPACE III in order to provide the opportunity for the Assembly to express its views on that process and the ways ahead. The review would also help to raise the awareness of all Member States of the important contributions that space science and technology and their applications were making, and could make, towards economic and social development, particularly in developing countries.

Format of the review by the General Assembly

9. The Working Group recommended that, in order for the General Assembly to review the progress made in the implementation of the recommendations of UNISPACE III, a separate item entitled "Review of the implementation of the recommendations of the Third United Nations Conference on the Exploration and Peaceful Uses of Outer Space" should be included in the agenda of the Assembly at its fifty-ninth session, in 2004, in addition to the item entitled "International cooperation in the peaceful uses of outer space". The Working Group also recommended that the new item be considered by the General Assembly in plenary.

Preparation of the report to the General Assembly at its fifty-ninth session, in 2004

10. The Working Group agreed that the following actions needed to be undertaken in preparing the report to the General Assembly:

(a) Assessment of the progress made in the implementation of the recommendations of UNISPACE III;

(b) Evaluation and identification of areas where action was needed to create the necessary conditions to carry out space activities through cooperation at international levels, including regional and subregional levels, to enhance economic, social and cultural development;

(c) Consideration of further actions that should be undertaken on the basis of recommendations made by the action teams established by the Committee at its forty-fourth session to implement recommendations of UNISPACE III; and identification of a few concrete actions that could be undertaken after the review by the General Assembly at its fifty-ninth session, in 2004;

(d) Identification of those recommendations of UNISPACE III which had not been implemented;

(e) Identification of the way ahead, in particular for the Committee and its subsidiary bodies.

11. The Working Group agreed that the following sources of information should be taken into account in preparing the report to the General Assembly:

(a) Recommendations and reports of the action teams;

(b) Results of the consideration by the Committee and its subcommittees of the agenda items of relevance to the implementation of the recommendations of UNISPACE III;

(c) Specific contributions by entities of the United Nations system and by intergovernmental and non-governmental organizations having observer status with the Committee;

(d) Results of those global conferences held within the United Nations system which have relevance to the work of the Committee and the implementation of the recommendations of UNISPACE III, such as the World Summit on Sustainable Development and the World Summit on the Information Society;

(e) Results of specific events that have relevance to the implementation of the recommendations of UNISPACE III, such as the World Space Congress;

(f) Input provided by regional mechanisms such as the Space Conference of the Americas;

(g) Global initiatives or policies pursued at the international level to bridge the digital divide.

12. The Working Group agreed upon the following indicative, preliminary draft outline of the report:

I. Background and results of UNISPACE III

II. Mechanisms for implementing the recommendations of UNISPACE III

III. Progress achieved in implementing recommendations

A. Progress made by the Committee and its subsidiary bodies, including action teams

B. Progress achieved by regional mechanisms

C. Activities of entities of the United Nations system that contributed to the implementation of the recommendations of UNISPACE III

D. Activities of intergovernmental and non-governmental organizations that contributed to the implementation of the recommendations of UNISPACE III

IV. Identification of gaps in the implementation of the recommendations of UNISPACE III, including a short explanation of why those gaps exist

V. Synergies between the implementation of the recommendations of UNISPACE III and the results of global conferences held within the United Nations system and other global initiatives

VI. The way ahead

A. Action to be taken by the Committee and its subsidiary bodies

B. Action to be taken by the Office for Outer Space Affairs and, if necessary, other units of the Secretariat

C. Recommendations to other entities of the United Nations system

D. Suggestions to intergovernmental and non-governmental organizations

E. Suggestions for ways and means to strengthen international cooperation, including at the regional and sub-regional levels, in implementing the recommendations of UNISPACE III, including consideration of possible new mechanisms for cooperation

13. The Working Group agreed that its Chairman should ensure the preparation of the entire draft report for consideration by the Working Group in 2004. The Working Group also agreed that its Chairman should be assisted in that matter by the chairmen of the Scientific and Technical Subcommittee, its Working Group of the Whole and the Legal Subcommittee.

14. The Working Group agreed upon the following timetable for preparing the report:

Date	*Action/Event*
July 2002	The Office for Outer Space Affairs:
	(a) To invite entities of the United Nations system and intergovernmental and non-governmental organizations having observer status with the Committee to submit contributions to the review;
	(b) To identify specific events that have relevance to the implementation of the recommendations of UNISPACE III and invite the organizers of those events to forward the results of their events to the Office;
	(c) To identify global conferences held in the United Nations system whose results should be taken into account in the review by the General Assembly (in addition to the World Summit on Sustainable Development, the World Summit on the Information Society and the General Conference of the United Nations Educational, Scientific and Cultural Organization (UNESCO)).

Date	*Action/Event*
July 2002- February 2004	The Office for Outer Space Affairs to participate, as much as possible within the resources available, in the preparatory meetings for the World Summit on the Information Society and other global conferences to be held in the United Nations system that should be taken into account in the review by the General Assembly
26 August- 4 September 2002	World Summit on Sustainable Development
December 2002	Deadline for submission of contributions by entities of the United Nations system, intergovernmental and non-governmental organizations having observer status with the Committee
February 2003	The Scientific and Technical Subcommittee at its fortieth session: (a) To review reports and recommendations submitted by action teams; (b) To review the outcome of the World Summit on Sustainable Development, in close cooperation with action team on sustainable development (recommendation 11) and the Office for Outer Space Affairs; (c) To review the results of specific events that have relevance to the implementation of the recommendations of UNISPACE III and that will have been convened by the end of 2002; (d) To review the contributions to be submitted by the United Nations system and intergovernmental and non-governmental organizations having observer status with the Committee; (e) To compile contributions and recommendations for consideration by the Working Group of the Committee.
March/April 2003	The Legal Subcommittee at its forty-second session to prepare its initial contributions to the report
June 2003	The Working Group of the Committee at its forty-sixth session: (a) To review additional reports and recommendations to be submitted by action teams after the fortieth session of the Scientific and Technical Subcommittee, in 2003; (b) To review the recommendations of the Scientific and Technical Subcommittee; (c) To finalize the outline of the report to the General Assembly and refine the timetable as necessary.

Date	*Action/Event*
10-12 December 2003	World Summit on the Information Society, first phase
February 2004	The Scientific and Technical Subcommittee at its forty-first session: (a) To review the final reports and recommendations of all action teams; (b) To prepare its final contributions to the report to the General Assembly for consideration by the Working Group of the Committee; (c) To review the results of the first phase of the World Summit on the Information Society, the General Conference of UNESCO and other conferences held in the United Nations system that have relevance to the implementation of the recommendations of UNISPACE III and have not yet been reviewed; (d) To compile contributions and recommendations for consideration by the Working Group of the Committee.
March/April 2004	The Legal Subcommittee at its forty-third session to prepare its final contributions to the report to the General Assembly for consideration by the Working Group of the Committee
June 2004	At the forty-seventh session of the Committee: (a) The Working Group of the Committee to finalize the report to the General Assembly; (b) The Committee to endorse the report prepared by the Working Group of the Committee.
Second half of 2004	Review by the General Assembly

15. It was recommended that the Committee, at its forty-sixth session in 2003, should reconvene the Working Group.

Notes

[a] *Official Records of the General Assembly, Fifty-fifth Session, Supplement No. 20* (A/55/20), paras. 75-76.

[b] Ibid., *Fifty-fourth Session, Supplement No. 20* and corrigendum (A/54/20 and Corr.1), paras. 123-124 and annex I.

[c] Ibid., *Fifty-sixth Session, Supplement No. 20* and corrigendum (A/56/20 and Corr.1), paras. 50 and 55.

Annex II

Declaration of Cartagena de Indias and Plan of Action adopted by the Fourth Space Conference of the Americas, Cartagena de Indias, Colombia, 14 to 17 May 2002

Declaration of Cartagena de Indias

Meeting at the Fourth Space Conference of the Americas (IV CEA), "The application of space science and technology in the Americas and their benefits for civil society", in Cartagena de Indias, Colombia, from 14 to 17 May 2002, the countries of the region, pursuant to United Nations General Assembly resolution 55/122:

1. Emphasize the relevance of the Conference as a favourable setting for reaffirming the commitment of the countries of the region to promoting the development of space activities, the application and peaceful use of technologies derived therefrom, and cooperation as a vital mechanism for achieving these objectives on an equitable basis;

2. Recognize the contribution made by the Third United Nations Conference on the Exploration and Peaceful Uses of Outer Space (UNISPACE III), notably with regard to the application of space science and technology to achieve sustainable development, particularly in the countries of the region;

3. Emphasize the importance of the Space Conferences of the Americas held in 1990, 1993 and 1996, which permitted an improved scientific and technical understanding of space affairs and promoted the benefits of better coordination among the countries of the region for the purpose of integration in the field of space science and technology, taking into account existing differences and making it possible to meet basic needs so as to achieve sustainable development in the region;

4. Express thanks for the support of the United Nations, through the Office for Outer Space Affairs (OOSA) and the Committee on the Peaceful Uses of Outer Space (COPUOS), and of the European Space Agency (ESA) for the organization of the Fourth Space Conference of the Americas and their commitment to the implementation of programmes and projects aimed at promoting increased use of space science and technology in the interests of economic and social development in the countries of the region;

5. Take up the recommendations of UNISPACE III and emphasize the urgency of promoting education in space science and technology as a fundamental tool for exploiting its potential benefits, and urge the countries of the region to redouble their efforts in that regard and to consider education in space science and technology the basis for the viable development of projects and related initiatives;

6. Confirm the commitment established at previous conferences and in United Nations General Assembly resolution 51/122 of 13 December 1996, in which States reaffirmed support for the exploration and use of outer space for peaceful purposes, taking into account the needs of developing countries. In that regard, the counties committed themselves to formulating and implementing policies, programmes and projects for international cooperation to strengthen sectoral development plans, with an implementation strategy requiring the application of scientific and technological knowledge for the peaceful use of outer space;

7. Recommend that new financial resources be sought through multilateral, regional and interregional mechanisms and from the private sector for the implementation of development activities, so as to fulfil the commitments entered into at the Fourth Space Conference of the Americas;

8. Welcome the progress made by Brazil and Mexico, with the support of OOSA, towards establishing the Regional Centre for Space Science and Technology Education in Latin America and the Caribbean, and urge countries to participate in this process;

9. Urge countries to implement the recommendations of UNISPACE III and United Nations General Assembly resolution 54/67, "International cooperation in the peaceful uses of outer space" and resolution 51/122, "Declaration on International Cooperation in the Exploration and Use of Outer Space for the Benefit and in the Interest of All States, Taking into Particular Account the Needs of Developing Countries", and encourage them to implement resolution 54/68, including the resolution endorsed therein entitled "The Space Millennium: Vienna Declaration on Space and Human Development", so as to promote the participation of men, women and young people all over the world in joint activities relating to space;

10. Encourage the countries of the region to continue to identify and implement projects that could make use of space technologies, emphasizing the importance of ensuring equitable and timely access to information in areas such as risk management, prevention and relief of natural and man-made disasters, tele-education, telemedicine and medical services, and protection of the environment;

11. Urge countries, government agencies and the private sector within and beyond the American continent to strengthen cooperation and coordination to improve the management of disaster prevention and relief networks by means of satellite applications, inter alia through the maintenance of a humanitarian network in the region, using satellite photographs taken before and after a natural disaster, so that countries can more easily carry out a prompt assessment of the damage and of action required to help the victims;

12. Reiterate the importance of international cooperation as a mechanism for strengthening peace, security and the promotion of human development through the peaceful use of outer space, and are confident that this will help to improve the quality of life of the citizens of the countries signatories of the Vienna Declaration on Space and Human Development;

13. Urge countries to adopt active policies to improve dissemination and publicizing of information about space issues so as to raise public awareness of the importance of using space technology to achieve sustainable development;

14. Bearing in mind the progress achieved in space activities by government bodies, space agencies, scientific and academic groups and the private sector in the region, urge those countries which participated in the Fourth Space Conference of the Americas to increase their support for the strengthening of institutions that promote national projects and programmes based on space science and technology, so as to ensure appropriate follow-up to the commitments entered into at the Conference;

15. Adopt the Plan of Action which forms an integral part of this Declaration;

16. Decide that the pro tempore secretariat shall promote implementation of the Plan of Action and urge countries within and beyond the region, space agencies and organizations, non-governmental organizations and private industry to support it in accomplishing the work entrusted to it;

17. Agree that it is important to establish mechanisms for effective cooperation and coordination in the region and, to that end, instruct the pro tempore secretariat to take the relevant steps outlined in the Plan of Action; and welcome the report presented by the delegation of Chile on the creation of a mechanism for regional coordination on space matters;

18. Commend and congratulate the Government of the Eastern Republic of Uruguay for the efficient work that it carried out in its capacity of pro tempore secretariat of the Third Space Conference of the Americas, including following up and implementing the activities agreed upon at that Conference, which contributed to the convening of the Fourth Space Conference of the Americas;

19. Thank the International Support Group for the Fourth Space Conference of the Americas for organizing the Conference, and consider it appropriate for the Group to participate in the same capacity in the work of the pro tempore secretariat;

20. Thank the Government of the Republic of Chile for convening and organizing the preparatory meeting of experts for the Fourth Space Conference of the Americas, which was held in Santiago de Chile from 3 to 5 April 2002;

21. Thank the Government of Colombia and the city authorities of Cartagena de Indias for the reception and facilities afforded to the delegations for the Fourth Space Conference of the Americas, express their support for the pro tempore secretariat and their willingness to collaborate with it, and wish it every success in its work.

Cartagena de Indias, Colombia, 17 May 2002

Plan of action

The countries participating in the Fourth Space Conference of the Americas, held from 14 to 17 May 2002 in Cartagena de Indias, Colombia, taking account of the will to strengthen regional coordination and cooperation pursuant to the space agenda of the Americas and considering the outcome of the work accomplished in Committee I (Intergovernmental) and the thematic Committees II (Development of space science) and III (Applications of space technology; benefits for civil society), which were established to expedite the work of the Conference, instruct the pro tempore secretariat to take the following action:

1. Promote cooperation and coordination of programmes or projects proposed or under way, at the regional level, through the agreed mechanisms and in the following areas, among others:

(a) Protection of the environment and support for sustainable development;

(b) Prevention, early warning and rescue and relief operations in the event of natural and man-made disasters;

(c) Education, research and development in science, technology and space applications;

(d) Space law;

2. Adopt measures to implement the recommendations drawn up during the Fourth Space Conference of the Americas and ensure follow-up;

3. Ensure that universities and scientific, technical and legal associations, within and beyond the region, as well as space agencies and the specialized agencies of the United Nations actively participate in international cooperation projects;

4. Promote the dissemination and publicizing of information about space issues so as to raise public awareness of their importance;

5. Organize, in conjunction with the Governments of the member States of the Conference, working meetings with institutions and bodies involved in space affairs, with a view to identifying areas of cooperation and following them up;

6. Take appropriate action in the areas outlined below, pursuant to paragraph 17 of the Declaration of Cartagena de Indias:

(a) Analysis of common requirements, based on a survey sent to all the countries in the region, so as to identify priorities, areas of interest, available human resources, existing research centres, projects in progress, focal points etc.;

(b) Securing of the participation and support of the United Nations Committee on the Peaceful Uses of Outer Space, the Office for Outer Space Affairs and, if necessary, other organizations at all stages of the implementation of this process;

(c) Identification of sources of funding for multilateral cooperation;

(d) Creation of a working group composed of representatives of the countries of the region, designated by their respective Governments, to help determine areas of action for regional coordination; to that end, the group will work closely with the pro tempore secretariat;

7. Obtain increased support by convening an international support group to help implement the recommendations and tasks assigned to the pro tempore secretariat by the Fourth Space Conference of the Americas.

Annex III

Statement to be presented on behalf of the Committee on the Peaceful Uses of Outer Space to the World Summit on Sustainable Development

1. I am honoured to address the World Summit on Sustainable Development in my capacity as Chairman of the Committee on the Peaceful Uses of Outer Space.

2. The Committee believes that space science and technology can play an important role in achieving the objectives of the World Summit on Sustainable Development. Space science and technology and their applications could contribute more efficiently to the efforts of humankind to promote sustainable development in all countries and regions of the world. With the use of space applications, we can meet the challenges of improving people's lives and conserving natural resources in a world with a growing population that places an increasing strain on all ecosystems and natural resources. Advances in space science and technology would help us respond to the increasing demand for food, water, shelter, sanitation, energy, education, health services and economic security. These are some of the challenges that must be met to achieve sustainable development. However, the potential of space science and technology to assist us in meeting these challenges is not well acknowledged. At its session in June of this year, the Committee therefore agreed to address the World Summit, in order to bring to the attention of delegations the numerous and diverse benefits of the use of space science and technology. In this context, it is also important to indicate that space science and technology education is a crucial instrument for the viability of sustainable development. The Committee encourages delegations to take these considerations into account during the World Summit.

3. In 1999, the Third United Nations Conference on the Exploration and Peaceful Uses of Outer Space, known as UNISPACE III, identified numerous ways in which space science and technology and their applications could help to improve the well-being of humankind. At UNISPACE III, the participating States developed a global strategy to turn into reality the potential of space applications to help to create conditions for sustainable development. That strategy is contained in the resolution entitled "The Space Millennium: Vienna Declaration on Space and Human Development", which was subsequently endorsed by the General Assembly in its resolution 54/68. The Committee on the Peaceful Uses of Outer Space is taking steps to implement the recommendations of UNISPACE III through action teams consisting of Member States, entities of the United Nations system and intergovernmental and non-governmental organizations that are willing to carry out the work necessary to obtain tangible results in the next few years.

Advancing knowledge of the Earth and its environment

4. In monitoring the Earth and its environment, satellites can provide the synoptic, continuous and long-term global observation needed to understand the Earth's system more comprehensively, in conjunction with the use of modelling technology, to address issues such as: (a) the influence of the Sun on the Earth's environment; (b) global climate change; and (c) the impact of human activities and changes in the ozone layer on the environment and human health. Satellites can thus be used for permanent surveillance and as part of a space-based system in monitoring changes in the various components of the global environment. The Committee on Earth Observation Satellites, which includes 22 major satellite operators in the world, coordinates the acquisition of satellite data. Observing systems that monitor land, ocean and atmospheric changes are the complementary in situ component needed to establish an Integrated Global Observing Strategy (IGOS). I am pleased to note that the major satellite operators and the international organizations responsible for terrestrial observations have formed a partnership, known as IGOS-P, that is providing the integrated information needed to understand changes in the environment at the global level. The Committee on the Peaceful Uses of Outer Space and, in particular, its Scientific and Technical Subcommittee support the work being conducted by IGOS-P.

5. Satellites also enable the systematic observation of the Earth's system, which is essential to monitoring the implementation of existing environmental conventions, such as the United Nations Framework Convention on Climate Change, the Convention on Biological Diversity and the United Nations Convention to Combat Desertification.

Monitoring the environment and natural resources

6. While the value of Earth observation images in the preparation of risk assessment maps and mitigation of the effects of disasters has been recognized to some extent, satellites are increasingly providing important information for early warning and management of natural or industrial disasters when they occur. The International Charter on Space and Major Disasters, an initiative of space agencies that followed UNISPACE III, can put satellite images of major disaster areas in the hands of rescue teams almost immediately. This response time, heretofore not possible, saves lives and reduces material losses. The Office for Outer Space Affairs of the Secretariat is currently working on becoming a cooperating body of the Charter. Once this accession is concluded, it could give the competent United Nations bodies more rapid access to space data when major disasters occur.

7. Space technologies offer valuable decision-making tools for weather forecasting, climate predictions, monitoring of natural resources and various activities relating to agriculture, and management of land, ocean and coastal resources, water, forest, fisheries and minerals. For example, increased use of satellite data would improve the prediction of rainfall using well-developed rainfall estimation techniques. The information derived from such prediction would be very useful for crop and flood forecasting. Especially in Africa, the increased use of satellite images would greatly assist in the detection of army worm and locust breeding areas, as well as drought prediction and desertification monitoring.

Facilitating communications and reducing the information gap

8. Information infrastructure is an essential element of development in any country, and space technology is a potent tool for gathering information and for communicating it rapidly and efficiently over wide and remote areas. Newly proposed or enhanced satellite telecommunications services include mobile telephony, data and image transmission, videoconferencing, digital audio, multimedia and global Internet access. Wide-ranging applications include distance learning and telemedicine, providing essential health and medical services and assisting in enhancing education opportunities, in particular in rural and remote areas.

9. Satellite communications can provide an irreplaceable communications tool in disaster mitigation and relief operations. Their use is vital in situations where ground-based infrastructure is unusable. To make these valuable tools available in time in emergency areas, it is important that more States ratify or adhere to the 1998 Tampere Convention on the Provision of Telecommunication Resources for Disaster Mitigation and Relief Operations.

10. The use of satellite communication should be underscored as the backbone of international telecommunication services and as an essential tool in international and regional trade. It assists in marketing national products and is also used in all other international economic activities as a means of information exchange.

Using position and location capabilities to enhance human security and development

11. Global navigation satellite systems (GNSS) offer public services that have numerous applications. The signals from GNSS are being used to enhance the safety and effectiveness of transportation by land, sea and air. With their extremely high accuracy, global coverage, all-weather capability and usefulness at high velocity, GNSS applications also support and improve a wide range of activities, such as telecommunications, power systems, mapping and surveying, agriculture, crime prevention and law enforcement, as well as emergency response and disaster reduction.

Commercial benefits and spin-offs from space activities

12. The private sector is providing products and services based on space technologies that improve the quality of life all over the world and create employment opportunities. This commercial activity is essential, particularly in Earth observation applications that serve the social interests.

13. Space research and development promotes and incorporates innovations in many high-technology areas, such as computer software and hardware, advanced electronics and materials, telecommunications and health sciences. The use of these innovations and their spin-offs, for example in establishing reliable communication networks or providing health services in remote areas, can build the basis for worldwide economic and social development.

Furthering knowledge and building capacity

14. While space science and technology and their applications can contribute to the promotion of sustainable development in various ways, they would not be fully utilized without adequate human resources. The Committee on the Peaceful Uses of Outer Space fully recognizes the importance of furthering knowledge and building capacity in the use of space science and technology. Concerted efforts are being made by its member States, together with the Office for Outer Space Affairs, to transfer appropriate knowledge and skills, including through training projects in developing countries, for using and benefiting from space science and technology.

15. A key element in building such capacities in developing countries is the establishment of regional centres for space science and technology education in developing countries, under the auspices of the United Nations Programme on Space Applications. Such centres have been established in India for Asia and the Pacific and in Morocco and Nigeria for Africa. Similar centres are being established in Brazil and Mexico for Latin America and the Caribbean and in Jordan for Western Asia. Countries with economies in transition have established the Network of Space Science and Technology Education and Research Institutions of Central Eastern and South-Eastern Europe. These efforts are complemented by fellowship programmes and the organization of seminars and training courses that are offered to a large degree by developed countries.

16. The development of space science and technology has contributed to generating capacity that furthers various aspects of sustainable development.

Recommendations

17. In concluding, I wish to offer the following recommendations to the World Summit. The delegations to the World Summit are invited:

(a) To recognize the high importance of space activities for the provision of operational services, information and decision-making aids in support of sustainable development;

(b) To bear in mind the progress made in the capability of space activities to serve as useful tools for realizing sustainable development since the United Nations Conference on Environment and Development, held in Rio de Janeiro, Brazil, in 1992;

(c) To call upon the space-related organizations, through their member States, intergovernmental and non-governmental organizations and other relevant entities and the private sector to carry out space activities that can support sustainable development;

(d) To bring to the attention of regional and world development and environmental organizations the wide range of opportunities that space technology can offer to facilitate their work;

(e) To recognize that the Committee on the Peaceful Uses of Outer Space is the primary United Nations body for coordinating and achieving international cooperation in space activities, in close cooperation with relevant organizations, to initiate action utilizing space technologies for the implementation of the recommendations of the World Summit on Sustainable Development and follow-up to them;

(f) To acknowledge and support the establishment and development of regional centres for space science and technology education;

(g) To recognize the importance of enhancing cooperation with national centres in the field of space science and technology in promoting space science and technology and their applications for sustainable development;

(h) To call for close dialogue and coordination between the Committee on the Peaceful Uses of Outer Space and decision makers involved in the follow-up

of the outcome of the World Summit on Sustainable Development, in order to ensure that space activities contribute effectively to the achievement of the goals of the World Summit; and

(i) To invite the Committee on the Peaceful Uses of Outer Space to examine the outcome of the World Summit on Sustainable Development and to identify ways in which space activities can help to implement follow-up action emanating from the World Summit and to monitor and evaluate that implementation.

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